AIRCAM AVIATION SERIES №35

MITSUBISHI-NAKAJIMA G3M1/2/3 KUSHO L3Y1/2

IN JAPANESE NAVAL AIR SERVICE

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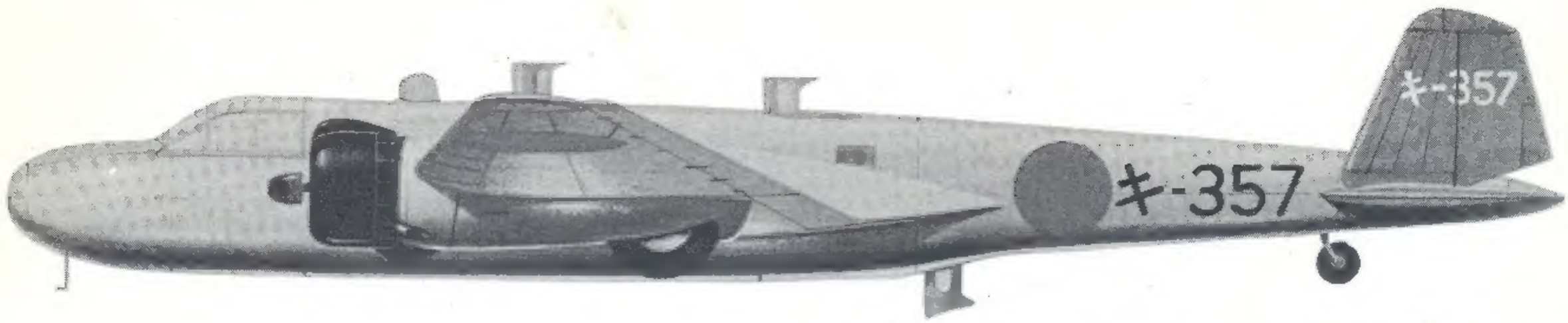
No. 35



Mitsubishi G3M1, Kisarazu Naval Air Corps, Omura, Kyushu, July 1937, China August 1937–December 1938. Scheme as D5.

MITSUBISHI-NAKAJIMA G3M1/2/3 KUSHO L3Y1/2 IN JAPANESE NAVAL AIR SERVICE

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The Mitsubishi G3M, one of the first of the modern multi-engined monoplane bombers with retractable undercarriage in the world is also the first of the Japanese Naval Air Service multi-engined types to be published in the AIRCAM series. Thanks are due to all those who assisted with photographs and information whose names are listed below in alphabetical order:
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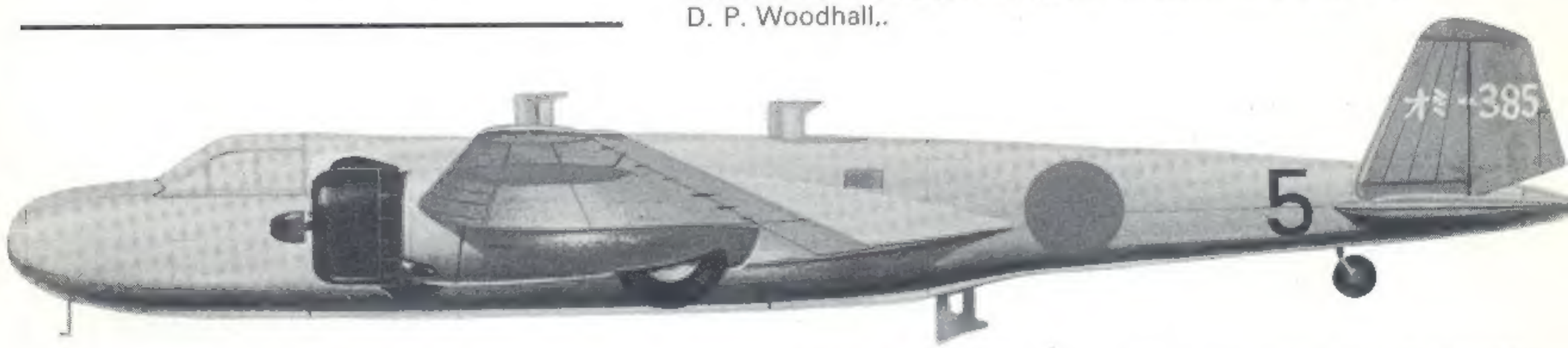

Mitsubishi G3M1, Omimato Naval Air Corps, Northern Honshu, Japan, October 1937 Scheme as D5.

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G3M2 Model 22 of Kanoya Naval Air Corps heads west to Chungking, summer 1941. (Maruzen via Bueschel)

Mixed bag of G3M2 Model 22, foreground, and G3M2b Model 21B, background, of Mihoro Naval Air Corps stationed at Thudaumot, French Indo-China in December 1941. (Hideya Ando via Bueschel)

MITSUBISHI: NAKAJIMA G3M1/2/3

Capt. Kameo Sonokawa glanced at his watch. Almost nine o'clock. It had been a long and frustrating morning. Lifting from their airfields at Thudaumot and Soctrang near Saigon at sunrise on 10 December 1941, the twin-engined Mitsubishi G3M2 Models 21 and 22 high-level torpedo-bombers of the *Mihoro* and *Genzan* Naval Air Corps of the Imperial Japanese Navy's 22nd Air Flotilla, 11th Air Fleet, as well as torpedo-equipped models of the newer Mitsubishi G4M1 bombers of the *Kanoya* Naval Air Corps, had fruitlessly searched for "Force Z". Made up of the British battleships H.M.S. *Repulse* and H.M.S. *Prince of Wales*, and supported by the four destroyers H.M.S. *Electra*, H.M.S. *Express*, H.M.S. *Tenedos* and H.M.A.S. *Vampire*, "Force Z" was the strongest surface fleet in Malayan waters. It gave the British defenders command of their shorelines, and provided the mobility to strike at any potential invasion landing points at will.

This British force was recognised as the greatest single threat to Japan's Malayan invasion plans, and would therefore be the decisive factor in the campaign. Imperial Headquarters in Tokyo was prepared for any eventuality, and had an alternative plan ready for immediate execution. In the event the going got too tough, the invading Imperial Japanese Army would retreat to the beaches to be picked up by the Imperial Japanese Navy, resisting British surface fleet attacks to the best of their ability under cover of Japanese Army and Navy aircraft flying from safe bases in Thailand and French Indo-China. The full weight of Japanese offensive power would then be thrown at the Philippines, to return to Malaya another day.

From its first day on 8 December the Malayan campaign had been going well. The Japanese Army Air Force (JAAF) had secured the northern airfields at Kota Baharu and gained control of the air, although the beachheads were vulnerable as troops and supplies were being unloaded hour after hour. And then "Force Z" left Singapore! It was spotted by Japanese submarines headed north late on 9 December. That night the bombers of the 22nd Air Flotilla were sent on their way south-east from Saigon for a night torpedo attack. They couldn't find the vessels. Early the next morning another sub-sighting signalled the fleet's southern track. Warned of Japanese air activity to the north, Adm. Tom Phillips, Commander of "Force Z", had reversed his course. At 06.00 ten lightly-armed single- and twin-engined reconnaissance planes took off to find the fleet, followed an hour later by 27 high-level and 61 torpedo-equipped bombers which headed south along the 105th meridian in staggered nine-plane flights to intercept the vessels as they approached Singapore. Again no luck. The clouded sky was hiding the fleet, and the two-day-old Malayan invasion was in jeopardy.

Capt. Sonokawa, flight commander of the crack *Genzan* Naval Air Corps, glanced at his watch again. On the way to ten o'clock. His squadrons were headed north back to their bases. So were the others. Months of training wasted. His pet idea of low-level torpedo drops would have to wait. Then, at 10.30 hours, the radio message came. "Force Z" had been spotted by one of the reconnaissance planes through the clouds some 70 miles south-east of Kuantan. A minor course alteration by the airborne bombers to the west of their return leg would place them in the vicinity in half an hour. Adm. Phillips had altered his course again, only this time the Japanese attackers were only minutes away. At eleven o'clock Sonokawa saw his quarry. Contacting his command by radio, he ordered "Assault Formation", and dropped his 1st Squadron lower and lower until they were barely skimming the water. It was a matter of logistics. Although the ordnance department of the Imperial Navy had

claimed that a torpedo dropped from 500 metres would run true, Sonowaka's insistence on training with live torpedos proved just the opposite. Even at 200 metres nine out of ten would slap the water and stop, or dive deep. Sonokawa had trained his group to come in close and drop their torpedos at 100 metres where the chances for success were 50-50, ultimately improving these odds by bringing the drop altitude down to 50, and finally 20 metres. While the flying was tricky, the aircraft had the added protection of coming in below the elevation level of naval anti-aircraft guns.

The first "Force Z" contact was made soon after 11.00 a.m. by the high-level bombers of the *Mihoro* Naval Air Corps, making hits on both major vessels. Next, the torpedo-carrying bombers of the *Genzan* Naval Air Corps came in. Bearing down on the H.M.S. *Prince of Wales* under a wall of fire over their heads, the nine aircraft of Sonokawa's 1st Squadron made their drops and pulled away. Lt. Sadao Takai, leading nine more in the 2nd Squadron, followed with a pass at the H.M.S. *Repulse*. By noon the H.M.S. *Prince of Wales* was helpless, its steering gear wrecked. The H.M.S. *Repulse*, trailing smoke, was still manoeuvring. Then another wave of torpedo bombers came in at the capital ships, with nine the *Mihoro* Naval Air Corps, led by Lt. Katsuaku *Prince of Wales* while eight from the 3rd Squadron of the Mihoro Naval Air Corps, led by Lt. Katsusaku Takahashi, bore down on the H.M.S. *Repulse* under heavy fire some 60 metres above the water. Perfectly lined-up, Takahashi's torpedo wouldn't drop. Coming around again to re-join his squadron, the G3M2 made another pass. Still no drop. With the entire crew crying out in anguish over their failure, Takahashi turned the aircraft around for a third try, frantically pulling on the release mechanism as soon as the run began. The racks still held, only this time the bomber crew could see that the H.M.S. *Repulse* had been hit by one of their squadron. The massive ship was listing.

Then a new force appeared. The G4M1 bombers of the *Kanoya* Naval Air Corps, all torpedo-equipped, came down on the two floundering vessels. Nine came in at the H.M.S. *Prince of Wales*, and the first of 20 struck at H.M.S. *Repulse*, scoring a torpedo hit. The next two aircraft burst into massive balls of fire as the British gunners caught them coming in high, with another torpedo hit striking home as the remaining bombers held their course. At 12.33 p.m. the H.M.S. *Repulse* rolled over, and sank. Almost dead in its tracks, the H.M.S. *Prince of Wales* was helpless as the last nine remaining high-level bombers of the *Genzan* Naval Air Corps made a pass after the torpedo-bombers had headed for home. Only one bomb made a hit, but it finished off the battleship. By 1.20 p.m. the H.M.S. *Prince of Wales* was going under, and sank almost instantly.

The news of the sinkings was radioed back to Saigon, and in moments was on its way to Japan. In a scant two days after the unbelievable success of Pearl Harbour, the naval pilots of Imperial Japan had scored another impossible victory. Three of the new G4M1 torpedo-bombers had been lost in the attack, but only one of the venerable G3M3 aircraft, from the *Genzan* unit, was missing. Britain had lost far more; a centuries-old supremacy of the seas, and literally all of South-east Asia. The day of the battleship was over. Now nothing stood in Japan's way except time.

Japan's first modern bomber

The victory over "Force Z" was the G3M's finest hour. Entering production five years before the Pacific War as the Mitsubishi G3M1 Type 96 medium land-based attack plane, known in the Imperial Japanese Navy in its shortened name as the *96 Rikko*, it had survived the test of time through myriad model revisions. The aircraft series would remain in service throughout the Pacific war years in a variety of capacities, earning the Allied code names "Nell", for its bomber and patrol versions, and "Tina" in its transport role, with "Nell" ultimately finding universal acceptance for all models.

Work on the *96 Rikko* series actually began in 1933 as the personal pet project of Rear-Adm. Isoroku Yamamoto, then in charge of technical developments at the Naval Aircraft Establishment. At a time when the world was struggling in the depths of an international depression, Yamamoto authorized the spending of prodigious amounts of naval money to develop the basic format of a modern all-metal long-range land-based monoplane designed to seek out and destroy invading enemy fleets while still far out at sea. The Navy already had its first all-metal monoplane bomber in the *7-Shi* heavy attack bomber developed by Lt.-Com. Jun Okamura in the naval shops at Hirosho in 1932, but it was cumbersome, slow and underpowered. Completed as a prototype on 29 April 1933, the *7-Shi* held out the hope for future improvement provided its weight and size could be reduced, and the speed-killing disadvantage of a heavily-strutted fixed landing gear could be eliminated. Eight of the massive monoplanes were ultimately produced as the Hirosho G2H1 Type 95 heavy land-based attack, and called the *95 Daiko*. They were destined never to see service as bombers, ending their days in the late 1930's as freight carriers.

Coincident with the Navy's early explorations into the field of long-range bombing aircraft, the Japanese Army Air Force took a technological jump forward when Mitsubishi Heavy Industries Company, Ltd., successfully completed negotiations with Junkers Flugzeug and Motorenwerke, A.G., in Germany in 1928. The Japanese firm came out of the talks with Europe's leading producer of all-metal multi-engine aircraft with the exclusive rights to a number of original Junkers' construction patents, and ultimately obtained licences to produce the twin-engined K-47 light bomber, four-engined K-51 super heavy bomber, and other Junkers military aircraft and transports. Junkers engineers Eugen Shade and Willi Keil went to Japan to train the Mitsubishi engineers in their techniques, quickly creating a cadre of design disciples in Sueo Honjo, Kyunosuke Ozawa, Shinshiro Nakata and Kiro Takahashi, as well as other young Mitsubishi aeronautical engineers who had been trained in the United States and Europe. Honjo became Mitsubishi's bomber expert, serving as chief designer on the Mitsubishi Ki.1, Ki.2 and Ki.20 adaptations of the German medium, light and heavy bombers. By the end of 1932 they were all on their way to JAAF acceptance, with one already in production.

Sensing an Army advantage, and recognizing the technical skills available at Mitsubishi, Yamamoto over-rode the objections of his fellow naval engineering officers and assigned the development of a high-speed long-range multi-engine monoplane to the civilian aircraft manufacturer in 1933 on a non-competitive basis as Navy Project

Japan's first all-metal monoplane with a retractable landing gear; the Mitsubishi 8–Shi Special Reconnaissance is photographed early in 1934 with its designers and personnel of the Technical Department of the Naval Aircraft Establishment. (Sekai no Kokuki via Bueschel)

First flown in April 1934, the Ka.9 was soon damaged in a landing accident. (Shorzoe Abe via Bueschel)

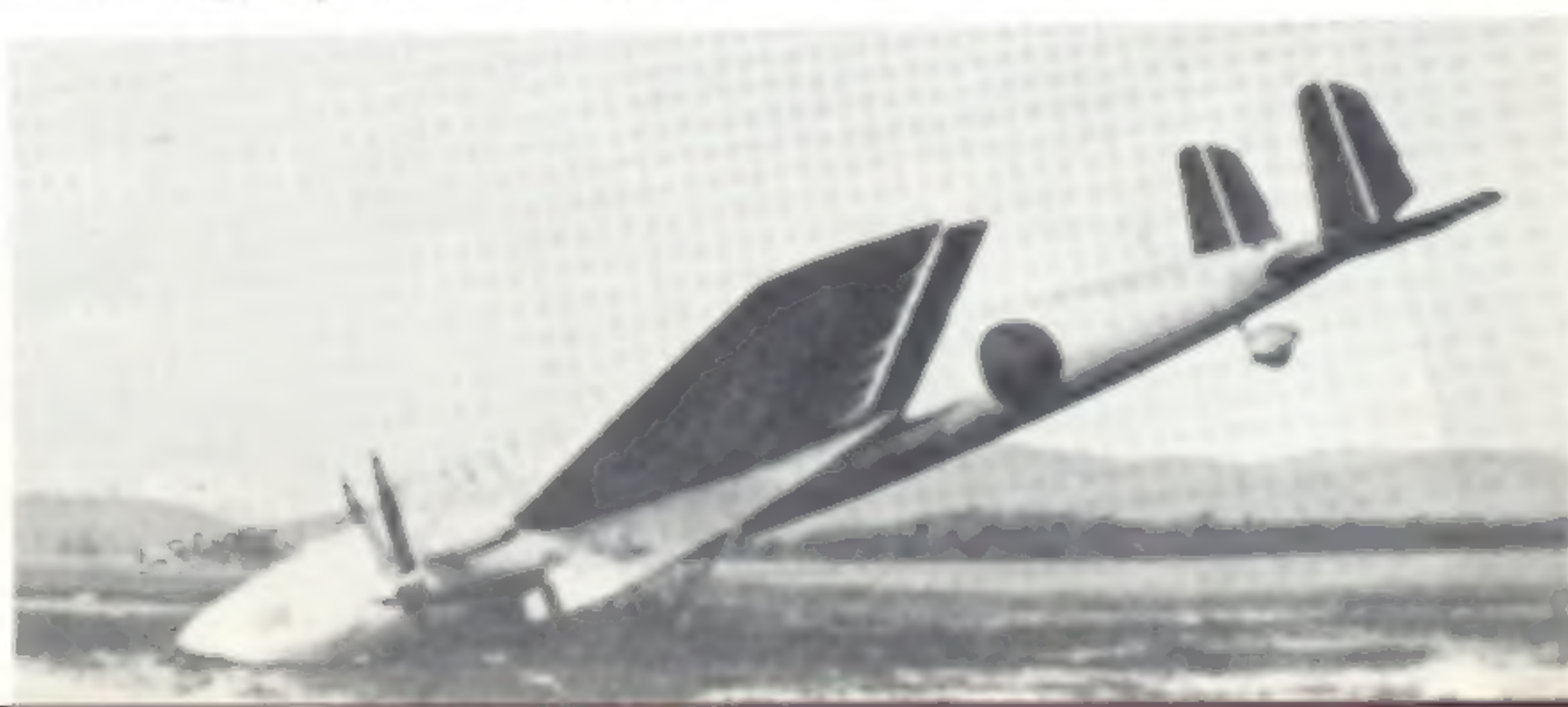
435. Under the cover specification of a 8-*Shi* special reconnaissance plane, the design was to be based on the Hirosho G2H1 format while utilizing the newer design techniques offered by Mitsubishi's experience with Junkers bombers. Chief designer Sueo Honjo was given free rein to produce a design that could ultimately be developed into an attack bomber, although there were no military load-carrying or performance restrictions placed on the theoretical work. Recognizing an opportunity to garner substantial future business from the Imperial Navy, the Mitsubishi firm pulled out all the stops and set up a special design group led by Honjo, supported by structural engineers Tomio Kubo and Nobuhiko Kusabake, and numerous detailers. Rolled out of Mitsubishi's experimental hangar on 18 April 1934, the highly-polished Mitsubishi Ka.9 prototype was a masterpiece of large-aircraft design, featuring the first retractable undercarriage to be produced in Japan. Following preliminary test flights by Mitsubishi pilot Yoshitaka Kajima, Rear-Adm. Yamamoto was informed that the experimental 8-*Shi* was ready for inspection. Rushing to Mitsubishi's test facility at Kagamigahara, Yamamoto revelled in the appearance of the new aircraft, and took it up for his own flight evaluation. His praise was boundless. Yamamoto's dream of a defensive aerial early striking force carrying naval torpedoes from island bases in the Pacific was in the realm of reality for the first time. Time would alter this concept, for the 8-*Shi* would lead to Japan's possession of the only long-range strategic bombing force in Asian skies in the late 1930s, a deterrent so powerful that it coloured the thinking of Western nations until the fact of Pearl Harbour and the invasions of Malaya and the Philippines in December 1941 forced a military reaction against Japanese expansion.

Development proceeds

Only one Ka.9 prototype was produced. To justify its role in naval thinking and provide purchase orders for payment it was retroactively designated as the G1M1 to be the first design in the new land-based attack series. Originally powered by two water-cooled Hiro Type 91 in-line engines of 650 h.p., the Ka.9 demonstrated a range of 3,265 nautical miles, far greater than that of any other military aircraft in the world. Success of the prototype led to an immediate follow-on order in 1934 for Navy Project 79 as a 9-*Shi* land-based attack plane. This time the specifications clearly stated loads, defensive armament and performance requirements, although the specs were within the area of reason based on the demonstrated capability of the G1M1 design. Developed by Mitsubishi as the Ka.15, the narrow streamlined fuselage of the earlier K.9 was replaced by a fatter structure designed to carry three retractable defensive gun turrets, a crew of five, and an external rack on the underside to carry a single 1,764 pound (800 kg.) torpedo. The basic Ka.9 wing was retained, although strengthened and further streamlined by the removal of the corrugated trailing edge skin surfaces so common to Junkers-theory bombers, and a new tail assembly was designed. The need for a durable landing gear to carry the heavier loads led to re-design and improvement, and by June 1935 the first Ka.15 9-*Shi* prototype was ready for testing. The first flight was made at Kagamigahara in July by Mitsubishi test pilot Yoshitaka Kajima only five months after Kajima first flew the revolutionary Mitsubishi Ka.14 monoplane fighter prototype, soon to enter production as the A5M1. By the end of 1935 it was obvious that the Mitsubishi firm was well on its way to becoming the primary naval aircraft producer for both bombers and fighters.

The first two torpedo-carrying Ka.15 prototypes mounted versions of the Hiro Type 91 in-line engines first used on the Ka.9, swinging massive four-blade fixed-pitch wooden propellers. But this was only an expedient. The greater power available in the modern radial engine attracted the attention of the Imperial Navy. The Mitsubishi firm had sent power-plant engineers to Europe and the United States to study the twin-row air-cooled radial, and by the autumn of 1935 the manufacturer had produced experimental models of the 14-cylinder *Shinten* radial of 920 h.p. Mounted on the sole Ka.9 G1M1 airframe, the new engines boosted the speed of the experimental airframe by over 15 m.p.h., although they were extremely unreliable. The parallel Mitsubishi *Kinsei* engine design, although somewhat lower rated, offered more promise for future development, with 830 h.p. *Kinsei 2* radials being mounted on the third Ka.15 prototype. A major step forward was taken with the fourth Ka.15 prototype, powered by two 910 h.p. *Kinsei 3* radials with American variable-pitch Hamilton-Standard metal propellers. While a total of 21 prototypes were assembled in a profusion of variations, it was the fourth prototype that formed the basis for production. In June 1936 the design was accepted for production as the G3M1 Type 96-1 medium land-based attack plane, Model I, to become known as the *96-1 Rikko*, and later to be known as the Model II.

The fifth and sixth prototypes continued to mount the Hiro Type 91 in-lines, with one example later assigned to the *Ominato* Naval Air Corps for cold-weather testing in 1936 with a ski landing gear. Once production of the *Kinsei 3* powered G3M1 Model I had been approved, the four Hiro-engined examples were retroactively designated G3M1a Model 1A. The two *Kinsei-powered* prototypes became known as the G3M1b Model 1B, with



Built as a test airframe only as Navy Project 435, the 8–Shi was originally powered by Hiro Type 91 liquid-cooled engines of 500 h.p. (Tadashi Nozawa via Bueschel)

Maritime reconnaissance attack development of the Ka.9, the 9–Shi Medium Land Based Attack was developed by Mitsubishi as the Ka.15 in 1934 and early 1935. Prototypes 1, 2, 5 and 6 were powered by Hiro Type 91 liquid-cooled inlines. (Asahigraph via Bueschel)

the G3M1a and G3M1b designations remaining unofficial due to their application to experimental rather than production aircraft. The six prototypes first underwent service evaluation at the *Yokosuka* Naval Air Test Centre, following which most of them were assigned to the *Tateyama* Naval Air Corps on Honshu for service evaluation during which time they received their first Press coverage as a result of participation in fly-by displays in the summer of 1936. The only major hitch in the testing programme had been loss of the second prototype. Its crew of five had been killed when the aircraft crashed on the border between Chosen (Korea) and Manchoukuo. The accident was attributed to a malfunctioning wooden propeller, and possible aileron vibration. The switch to metal propellers and a redesigned aileron mass balance seemed to solve the problem, and testing continued.

Once the basic format of the torpedo-carrying G3M1 series had been established with the fourth prototype, the Imperial Navy saw the opportunity to experiment further with the additional capabilities of the basic design. It was immediately obvious that the Ka.15 could be more than just a defensive long-range maritime reconnaissance attack plane, for it also had the lines and load-carrying capability of an offensive land-bomber. In a quick design twist, the remaining 15 prototypes, all but one powered by *Kinsei* 2 radials of 830 h.p. swinging wooden propellers, were produced as high-level bombers with a redesigned fuselage featuring a glazed nose for a bombardier and an astrodome for the navigator. External racks were fitted to carry up to 1,764 pounds (800 kg.) of bombs in a variety of standard sizes. The tail dihedral was increased on the eighth prototype, with the eleventh brought up to the fourth prototype's standards by mounting *Kinsei* 2 radials of 910 h.p. with metal Hamilton-Standard propellers, but in other respects the glazed-nose prototypes were virtually identical. Assigned to the *Tateyama* Naval Air Corps in 1936 for service evaluation, the land-bomber models were eventually unofficially identified as the G3M1c Model IC, remaining in service with the unit for a number of years. They were the only models to be produced in this form, for it was found that the basic solid-nose G3M1 format could be altered to serve both functions.

The monoplane bomber enters service

The Model IC prototypes led to a significant change in the operational configuration of the initial G3M1 production models, for the *96-1 Rikko's* were produced as bombers. Evaluation testing of various Ka.15 prototypes at *Tateyama* had also revealed that the cockpit, a heritage from the original Ka.9, was cramped. This led to the redesign of a roomy flight deck that remained a characteristic of the *96 Rikko* series throughout its history. A total of 34 of the G3M1 production models were built in 1936 and early 1937, with the initial models mounting the bulky wooden four-bladed propellers prior to delivery of Hamilton-Standard three-blade all-metal propellers which were mounted on the later models. As production progressed the positioning of the retractable turrets and navigator's astrodome moved, with the last 12 examples finally setting the pattern for future crew placement.

As the *96-1 Rikko* came off the production lines of Mitsubishi's Naval Production Section at Oe-machi, groups of six and nine aircraft were assigned in batches to the *Kanoya*, *Kisarazu* and *Ominato* Naval Air Corps for unit formation. By the summer of 1937 the *96-1 Rikko* had become a standard service aircraft available in unit strength. As the units practiced with their new mounts, a more powerful adaptation of the Mitsubishi engine became available as the *Kinsei 41* of 1,075 h.p. By early 1937 production had been altered to a re-engined airframe as the G3M2 Type 96-2 medium land-based attack plane, Model 2 *96-2 Rikko*, later to be known as the Model 21. Considerable internal re-design had taken place to provide additional fuel tankage for longer ranges, and the retractable turrets were further streamlined to reduce air resistance. The basic G3M2 series would remain in production until late in 1941, with production batches differing widely in armament and fittings as battle experience dictated modifications. Good as it was, the *96-2 Rikko* might not have become the powerful weapon it turned out to be

The Ka.15 was developed as Navy Project 479, utilizing the Ka.9 wing and tail surfaces with a roomier redesigned fuselage and cockpit area to carry combat crew and loads. Example is shown under service evaluation at Tateyama Naval Air Corps early in 1936. (Sekai no Kokuki via Bueschel)

First flown July 1935, Type 91 powered Ka.15 prototypes were later retroactively designated G3M1a. Example shown testing winter ski landing gear at Ominato Naval Air Corps in northern Honshu, winter 1936. (Sekai no Kokuki via Bueschel)

Kinsei 2 radials so improved Ka.15 performance the basic design was further developed as a land bomber with glazed bombardier nose position and defensive armament. Fifteen prototypes varying in details and power were produced and evaluated, but no production order resulted. Retroactively designated G3M1c. (Sekai no Kokuki via Bueschel)

had it not been for two American inventions of the middle 1930's; the radio directional-finder and the Sperry automatic pilot. Protected by patents, and offered the opportunity to profit from domestic and foreign sales, the flowering of American aeronautical technology in the early 1930's by private industry closed the gap between the infant American aircraft and equipment manufacturers and the sophisticated European producers. Lack of government funds, or even interest, placed many of these advanced products on the open market. Japanese buyers, alert to the needs and future plans of the Imperial Navy, purchased rights to many of them, with directional finders and automatic pilots produced under licence in Japan showing up on the *96 Rikko* series as standard equipment to make the Mitsubishi bombers the first operational aircraft in the world to be so equipped.

When war came to North China at Peking as the Sino-Japanese "Incident" on 7 July 1937, the *96-1 Rikko* and *96-2 Rikko*-equipped *Kanoya* and *Kisarazu* Naval Air Corps were placed on alert and thrown into a gruelling training schedule to master the requirements of ultra-long-range bombing missions. As the days and weeks of July and August passed, with fighting growing in North China, the Imperial Navy planned a knock-out blow to end the fighting in China in Japan's favour in one stroke. In the Japanese view, the key to victory was Shanghai, situated on the coast of central China at the mouth of the Yangtze River, and aimed like a dagger at China's heartland. Chiang Kai-Shek's capital of Nanking was less than 200 miles up the river. The destruction of Chinese air power and the occupation of Shanghai would put the Japanese in command of the coast, and bring China to her knees. The Japanese Navy had done the same thing in February 1932 in a campaign that lasted a little over a month. In 1937 they were even better prepared, for now they had a heavily-armed long-range bombing force that could strike at will without the need for range-limiting escorting fighters. When the bombing units signalled their ability to undertake the longest bombing missions in history the plan was set. When two Japanese Marines were killed on guard duty at Shanghai's military airfield the second week in August, the Imperial Navy jumped at the excuse and began to land troops on 11 August. The war had moved south, and the strike was on! But times had changed in five years. Finally forced by Chinese public opinion to regard Japan as the primary enemy, rather than the renegade Communist Chinese forces he had been fighting for so many years, Chiang Kai-Shek girded for war. Just prior to the outbreak of the Sino-Japanese "Incident", Chiang hired Claire Lee Chennault, an outspoken and prematurely-retired U.S. Army Air Corps officer and one of the world's leading experts in the use of fighters against bombers, to create a Chinese Air Force (CAF) capable of defending China against any Japanese intrusion. Purchasing aircraft in Great Britain, Italy, France, Germany, and the United States, and setting up production facilities in China to meet the CAF's growing needs, the Nationalist fighter forces were just reaching their prime when the Japanese struck at Shanghai.

On 14 August, flying almost 400 miles due north and back across the northern end of the Formosa Strait from their bases at Taipei on Formosa, the G3M1 and G3M2 bombers of the *Kanoya* Naval Air Corps struck at Hangchow and the surrounding area to support the attack at Shanghai. As the home base of the CAF, and the location of China's major flight training school, Hangchow also held one of Nationalist China's largest force of interceptor fighters. The CAF fighters were superior to anything the Japanese had yet sent to China, with squadrons equipped with American-built Curtiss 65 *Hawk II* and 68c *Hawk III* biplanes and a number of Boeing 281 "Peashooter" monoplanes. When the 18 *Kanoya* Naval Air Corps *96 Rikko* bombers appeared over Hangchow, the Chinese promptly shot down six of them. Earlier the same day, the CAF had demonstrated its new power by sending over 100 of its bombers and fighters against the Japanese naval vessels lying off the Shanghai Bund, while over Nanking CAF fighters shot down another ten biplane carrier-bombers out of a force of 20 sent inland by the carrier *Kaga*. It had been a day of stunning victories for the CAF, and to this day 14 August is celebrated on Taiwan as Chinese Air Force Day.

The losses suffered by the *Kanoya* Naval Air Corps were immediately covered up. The next day, on 15 August, 24 bombers of the *Kizarazu* Naval Air Corps, flying an unbelievable 1,150 miles round trip over the waters of the East China Sea south-west from Omura on the Japanese island of Kyushu, struck at Shanghai and Nanking. Again, the losses remained unreported, with the Japanese Press heralding the great successes of the "Transoceanic Bombardment" of China from overseas Japanese bases. The entire world was galvanized, for nothing like this had ever been done before. Japan had demonstrated a bombing capability unmatched by any Western power. European observers were rushed to the war fronts and Japan to learn more about the Japanese bombing programme, erroneously reporting that the Japanese bombers were actually of German origin, based on a superficial resemblance between the *96 Rikko* and the Junkers Ju.86. More than any single other aircraft type, the *96 Rikko* was responsible for the dangerous pre-Pearl Harbour presumption that Japanese aircraft were merely copies of foreign types. It was inconceivable to the European and American observers that the original

First combat unit to receive the G3M1 was the Kanoya Naval Air Corps late in 1936. (Koku Nenkan via Bueschel)

Unit training in long-range missions proceeded at a gruelling pace throughout the spring and summer of 1937. (Koku Nenkan via Bueschel)

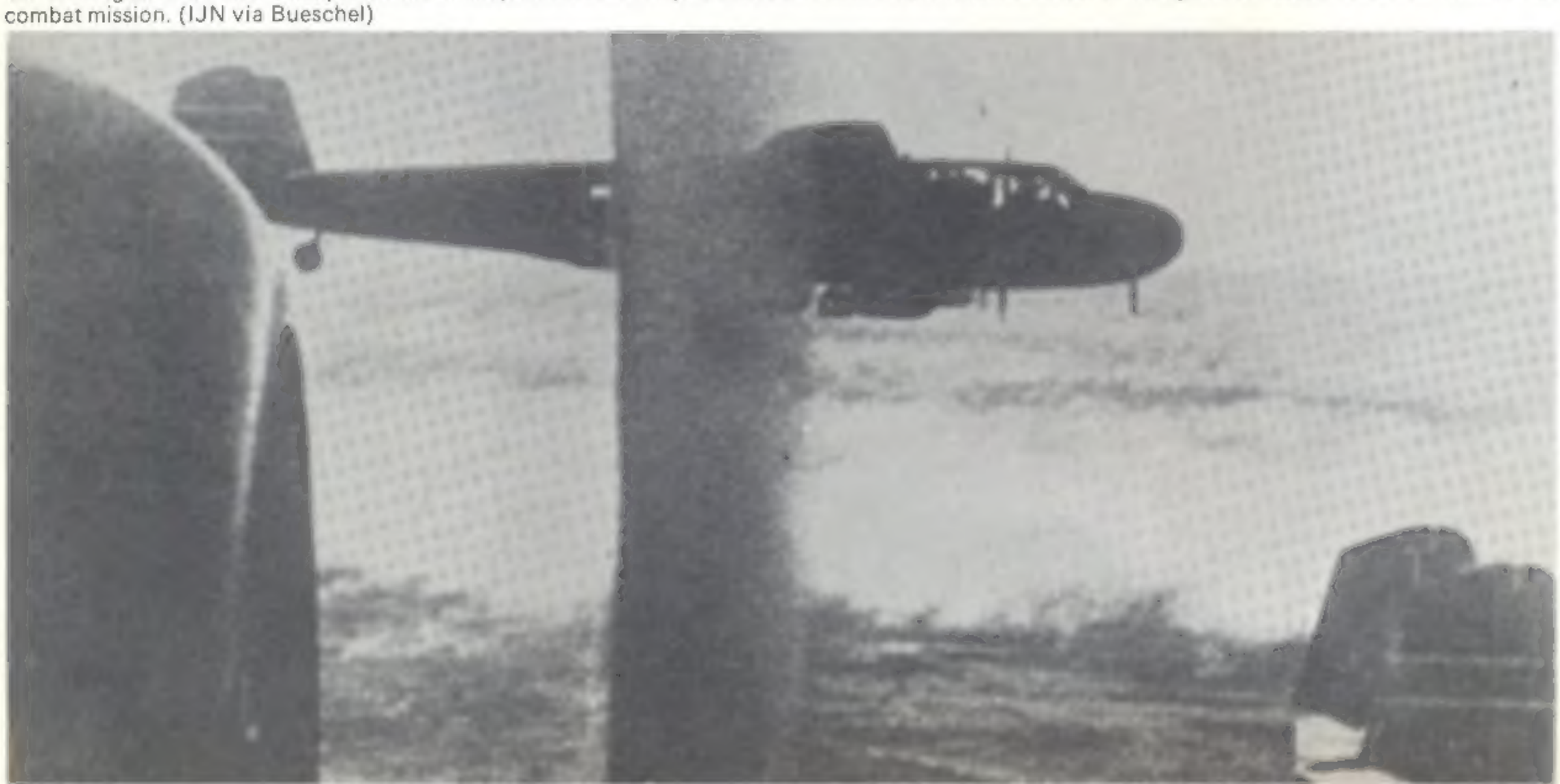
Japanese G3M design that had originated in 1933 was a far superior aircraft to the German Ju.86 of 1935.

Hitting Nanking three times in less than a week, the cost of the bombing programme quickly went beyond reason. Fifty-four bombers were lost over Nanking alone. Night-bombing proved just as costly, with the Chinese capital city defended by searchlights and fighters. As quickly as the "Transoceanic Bombardment" programme began, it ended. The excessive losses, and the demonstrated trait of the G3M1 and G3M2 bombers to explode into a ball of fuelled flame once the unprotected fuel tanks were hit, gave the bombing units second thoughts about sending their *96 Rikkos* on long unescorted missions over China without fighter escort. Not only had the *96 Rikko* revealed a poor defensive armament, the Chinese Air Force fighter strength was also too substantial to be ignored. In the first month of air fighting around Shanghai the aerial victory was unquestionably Chinese. The Japanese long-range bombing programme came to a halt for a month awaiting the delivery of the new Mitsubishi *96 Kansen* fighters to China.

Soon after the arrival of the Mitsubishi A5M1 and A5M2a *96 Kansen* fighters in China in September 1937 the *96 Rikko* bombers were operating from Chinese bases on a daily basis. Crews flying the G3M2 had joined the 2nd Combined Air Flotilla at the now occupied Kodai Airfield at Shanghai, flying in mixed units composed of fighters, dive-bombers and *96 Rikko* horizontal bombers as part of the 13th Combined Naval Air Corps. By the end of October the monoplane *96 Kansen* fighters had virtually cleared the skies over Nanking of Chinese fighters, and the *96 Rikko* bombers were moved to Changchow to bring the city under close attack. Soon everything that moved between Changchow and Nanking was under Japanese aerial assault. Working the area in flights of three aircraft, *96-1 Rikko* bombers struck at targets of opportunity. On 12 December 1937, this practice led to an international incident when three G3M1 bombers in a flight led by Lt. Shigeharu Murata, looking for enemy shipping on the Yangtze River between Wuhu and Nanking, took part in the attack on the U.S.S. *Panay*. Murata's bombers were the first aircraft to attack the American gunboat. Carrying six 120 pound (66 kg.) bombs each, they made a high-level pass in perfect Vee-formation, scoring a direct hit on the pilot house, and damaging the radio. Immediately followed by dive-bombers and strafing fighters, the *96-1 Rikko* bombers came around again for a second pass to complete the attack. The following day Nanking fell to Japanese troops, and the Sino-Japanese Incident entered a new phase. As the Chinese forces retreated further and further inland, the Imperial Navy's plan to end the war quickly was thwarted.

With the fall of Nanking, the triple Wuhan cities

On 14 August 1937 the Kanoya Naval Air Corps flew from Taipei, Formosa across the Formosa Straits to Hangchow, China, in the 96 Rikko's first combat mission. (IJN via Bueschel)



farther up the river were the next target in Central China, with the ranges again going beyond normal fighter protection. The CAF had also been strengthened, this time by the infusion of Soviet fighters and "volunteer" Russian units assigned to defend the temporary Chinese capital of Hankow early in 1938. Over 400 miles west of Shanghai, the Hankow raids in the spring and summer of 1938 soon demonstrated the vulnerability of the *96 Rikko* bombers over a defended target. In one raid, all but a few of the 36 bombers sent to attack Hankow were shot down by the Soviet defenders of the Chinese city while the populace below watched in awe. As the Japanese licked their wounds and reconsidered their alternatives, the Russians were accepted as saviours of the city. It was a month before the raiders came back, this time with the protection of *96 Kansen* fighters flying from Wuhu, although the long flight only gave the Japanese fighters a matter of minutes over the target.

While the Hankow raids were significant due to their long ranges, it was the Japanese assault on South China that finally brought the condemnation of most of the world down on Japan. Production of the *96-2 Rikko* had reached its stride, 130 of the bombers having been built in 1937, with an additional 186 to be completed in 1938, a remarkable achievement considering that the G3M2 was the largest aircraft yet to be produced in a quantity schedule in Japan. When a *96-2 Rikko* raid on Canton on 28 May 1938 killed an estimated 600 civilians, and wounded an additional 900, the Chinese Nationalist Government contacted every nation in which it had representation and called for aid to stop the indiscriminate bombing of civilian populations by the Japanese in China. As the raids continued throughout the summer, with the newly-formed *Mihoro* Naval Air Corps flying from Formosa across the South China Sea to strike at the helpless city, the rest of the world wrestled with its conscience. The raiders came in small groups at scattered hours throughout the day, and on 7 June struck at night, ending any possibility of rest for the beleaguered population. Where Japanese strategic bombing had once been regarded as interesting from a military point of view by the Western nations, from a political view it was now regarded as barbarous. In June 1938 the governments of Great Britain and the United States both publicly condemned the bombing of civilian populations in China and Spain in statements that would later cause considerable difficulty when the Allied bombing programmes of the 1940s got underway in Europe and Japan. On 17 June the Soviet Union went a step further by a direct reference to the raids in a note delivered to the Japanese Vice-Minister for Foreign Affairs in Tokyo which stated: "The operation of Japanese aviation in Canton is a completely unjustified act of brutal violence". Germany, engaged in its own bombing programme in Spain, remained silent.

In Japan, the notes were largely ignored. Statements were made to indicate that military targets alone were under attack—a fact denied by the blind night raids—and Canton ultimately fell on 21 October, giving Japan control of the Chinese coastline. Four days later, in Central China, Hankow succumbed. The fighting in China should have been over. But it wasn't! Earlier in the year Chiang Kai-shek had moved his capital once again, this time deep into China at Chungking, another 500 miles west of Hankow. The geography of China had once again frustrated the Japanese, forcing the long-range bomber force to face the continued prospect of flying unescorted raids far beyond the range of protective fighters. Imperial Japan found itself facing a deeper and deeper commitment against an obviously weaker antagonist that just would not accept defeat, creating a political and military morass that looked like it would never end. To the Japanese the only alternative was obvious; they would bomb the enemy into submission. There was work to be done, for this would call for new tactics and equipment.

The first attack on Chungking took place in January 1939. By early spring every major population centre left in unoccupied China was under attack as the ground war stalemated. *96 Rikko* bombers flying from Formosa raided

The following day, on 15 August 1937, the Kisarazu Naval Air Corps flew trans-oceanic missions of over 1150 miles from Kyushu to Shanghai and Nanking and return. (Asahigraph via Bueschel)

Foochow almost daily, as G3M2 bombers operating from Hainan Island struck deep inland at Kunming in Yunnan. By May, the Imperial Navy was firebombing Chunking. China was virtually helpless, and unaided. After a winter lull, the bombers came back, and by the summer of 1940 upwards of a 100 bombers appeared over Chunking almost daily. Four *96 Rikko* units stationed in China continued the bombing programme, with the *Kanoya, Takao,* 13th and 15th Naval Air Corps flying a variety of G3M2 models over the Chinese capital. Some 130 of the *96 Rikko* bombers were stationed in China during this period, including *Kinsei 42* and higher-altitude *Kinsei 45* powered G3M2b Type 96-2 Model 21b models with a variety of retractable turret installations; the first of the experimental G3M2c Model 21c models with permanent side-blister gun positions and finally in September 1940, beginning with production aircraft number 399, the units were re-equipped in Japan with the extensively redesigned G3M2 Model 22 with its hump-backed dorsal turret and repositioned side-blister turrets on a new streamlined fuselage that completely eliminated the drag-producing retractable ventral turret. The limited production of a highly-armed escort fighter version of the G3M2 Model 22 with a crew of ten manning gun positions all over the aircraft to protect *96 Rikko* bomber formations was considered, but dropped in favour of the G6M1, a wing-tip convoy fighter project assigned to Mitsubishi to protect the unescorted bombers. The idea proved to be a failure.

Chinese fighter opposition was far tougher than anticipated. This is an early G3M1 of the Kanoya Naval Air Corps placed on display in Japan in February 1938 showing bullet holes marked by arrows. (Nihon Hikoki Nenpo via Bueschel)

Unescorted raids over China were brought to a halt late in August, 1937, awaiting the arrival of defensive fighters. (Nihon Hikoki Nenpo via Bueschel)

As G3M2 Model 22 production hit its stride in 1940 *96 Rikko* units were equipped with the model, including the *Chitose, Genzan, Kanoya, Kisarazu, Mihoro, Ominato, Takao* 1st and 3rd Naval Corps. The advent of the new Mitsubishi 12-*Shi* G4M1 bomber, in prototype form early in 1940, led to re-evaluation of the *96 Rikko* series, with the decision reached to continue G3M2 Model 22 production to meet the needs of the bombing programme in China without the delays of immediately converting production lines. Later a 7.7 mm. gun was added to the cockpit position for side firing against frontal attack. Nakajima began production of the aircraft in April 1941, two months after Mitsubishi production finally came to an end to make room for the G4M1, and in June 1942 the airframe was modified and re-engined with the more powerful *Kinsei 51*, continuing in production at Nakajima as the G3M3 Model 23. It wasn't until February 1943 that G3M3 production finally ended and the *96 Rikko* finally relinquished its role as the bombing workhorse of the Imperial Navy.

By the autumn of 1940 the bombing programme over Chungking had settled into a one-sided game of target practice, with unhindered G3M2 Model 22 and G4M1 bombers dropping their bombs over the defenceless city, escorted and protected by the new Mitsubishi A6M2 *Zero-Sen* fighters (See Aircam No. 18). The bombing continued unabated into 1941 as world attention was directed toward the German Blitzkreig in Europe, the fall of France, and the German invasion of the Soviet Union. World War II was working its way to Asia, and by the autumn of 1941 Japan and the United States were locked in hopeless negotiations that would ultimately lead to war in the Pacific. To position itself for the inevitable, in August 1941 the JNAF pulled most of its land-based bomber units out of China for retraining and reassignment to French Indo-China, Japan and Formosa. In December 1941, on the eve of Japan's thrust against American, British and Dutch positions in Asia, over 200 G3M2 Model 22 bombers were in overseas combat units with an additional 52 stationed in Japan for homeland defence.

War comes to the Pacific

The preparation for the Pacific War led to the modification of existing G3M2 airframes for specialized duties. First converted in 1938, early G3M2 Model 21 bombers were refurbished as G3M2-K trainers, equipping the *Matsushima, Tateyama* and *Yokosuka* Training Naval Air Corps. Never produced in great numbers, the G3M2-K trainers were used for Advanced Combat Training of pilots and crews until late 1943, when training time was drastically reduced and this function was transferred to service units, only to be restored as a training function in the spring of 1944.

The most elaborate conversion was the G3M2-*Kai* high-altitude reconnaissance plane, in which newly-produced G3M2 Model 22 airframes were refitted with a large power-operated aerial reconnaissance camera electrically timed to take a picture every 15 seconds through a high-resolution 50 cm. lens. The camera system was supported by an internal framework that pointed the wide-angle lens straight down from the underside of the fuselage at the former bombardier's position. Operating alti-

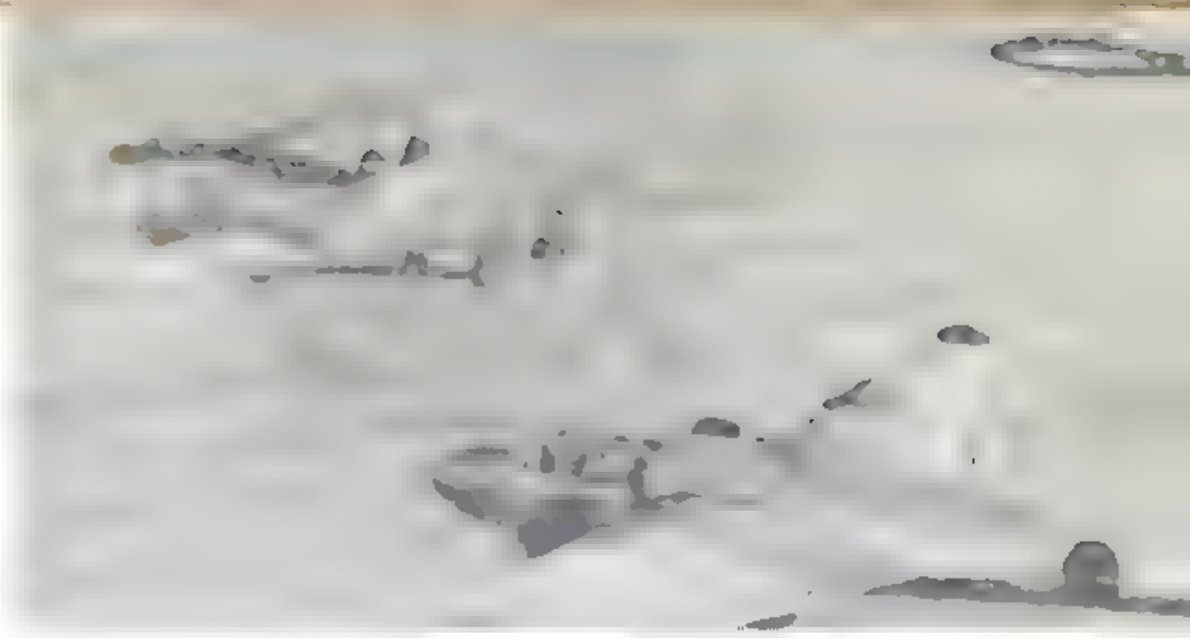
The most effective Weapons System in the world, circa late 1937; A5M2b 96 Kansen fighter and G3M2 96 Rikko bomber. (Sora via Bueschel)

tude was between 25,000 and 30,000 feet, or well beyond the practical interception limit of Allied fighter aircraft. First produced in February 1941 and tested at the *Yokosuka* Naval Air Test Centre, by April 36 of the aircraft were available to equip three squadrons of the "Special Assignment" 3rd Naval Air Corps formed at Takao, Formosa, under command of IJN Capt. Yoshio Kamei. The first mission was over the northern Philippines from Takao on 18 April 1941; followed in May and June by photographic reconnaissance of the southern Philippines, Rabaul and other areas in New Britain, Guam and French Indo-China, operating out of Peleliu, Truk, Tinian and Hainan Island and supported by naval auxiliary ships that carried the maintenance crews and special equipment. By the end of November 1941 the aircraft were once again operating over the Philippines. Painted overall light grey, with no trace of national insignia, in all of their clandestine missions the G3M2-*Kai* aircraft were never intercepted, although the United States protested the operation of high-altitude twin-engine aircraft over Guam in June, and Luzon in early December. To the Japanese it seemed impossible that they had been spotted. They were unaware that the Americans had a new system of detection, for they had never heard of radar.

War came to the Pacific at dawn, 8 December 1941, although the dateline made it 7 December in America and Europe. The first attacking land-based aircraft scheduled to be in the air were the G3M2 bombers of the *Takao* Naval Air Corps in southern Formosa, assigned to strike at the northern Philippine airfields as the sun rose. A solid fog kept them on the ground until 10.00 a.m., with 54 of the bombers started on their way by 10.45, allowing ten minutes or more to clear the runway after one of the heavily-laden bombers exploded into flame after its landing gear collapsed, killing its entire crew and reducing the bombing force to 53 aircraft. They hit the Philippines at Clark Field, and other airfields, during the lunch hour. On the same day, 36 G3M2 bombers of the *Chitose* Naval Air Corps struck at Wake Island from Kwajalein, destroying most of the defending U.S. Marine F4F-3 *Wildcat* Fighters on the ground. Far to the south-west, G3M2 bombers of the *Mihoro* Naval Air Corps in French Indo-China struck at Singapore while *Genzan* Naval Air Corps torpedo-bombers searched for the British Navy's "Force Z" in Malayan waters.

The bombings continued across the Pacific and Asiatic fronts the next day, followed by the 10 December news that Japanese bombers had sunk the H.M.S. *Repulse* and the H.M.S. *Prince of Wales*. The long-range bombers of the Imperial Japanese Navy had accomplished almost as much in two days of war as all the bombing raids in Europe in a World War already over two years old. Moving into the Philippines, across the Pacific, down the Dutch East Indies, and into Malaya, the *96 Rikko* became well known to beleaguered Allied forces. Early in February 1942, when the *96 Rikko*-equipped 4th Combined Naval Air Corps arrived at Rabaul, New Britain, the G3M2 had gone out to the farthest reaches of Japan's newly-won Empire. The six-year-old Japanese Naval bomber would go no further. The Battle of the Coral Sea in May, in which Rabaul-based *96 Rikko* bombers took part, losing four out of 27 used in the attacks against American ships, marked a subtle turning point. The G3M2 bombers were being used to thwart an Allied thrust in Japanese-occupied waters. With the beginning of the American invasion of Guadalcanal in the Solomons in August, the *96 Rikko* would be forced to finally go on the defensive, fighting the remainder of the Pacific War to protect Japanese positions rather than extend them.

From the opening days of the Pacific War, the G3M2 units stationed in Japan were cast in a defensive role in keeping with Admiral Yamamoto's concept of a long-range first line of defence against invading enemy surface fleets. On 18 April 1942 the *Kisarazu* Naval Air Corps sent 29 of its G3M2 bombers out to sea just before noon to locate and attack an American carrier task force that



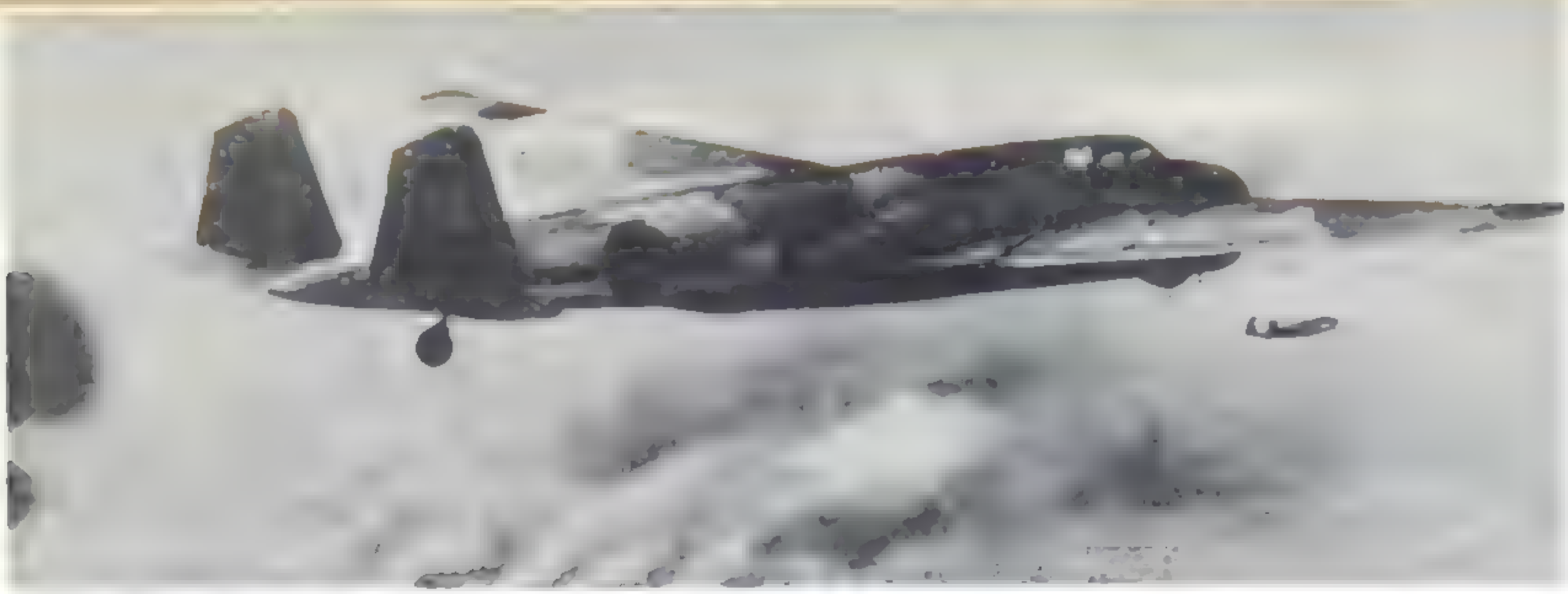
The Canton bombings of late May and June 1938 aroused world concern, and led to censure of Japan by the United Kingdom, the United States, and the Soviet Union. (Nihon Hikoki Nenpo via Bueschel)

had first been located on 10 April heading for Japan. Other units were alerted to be ready as the American fleet moved closer to the home islands with the target range set at 200 miles offshore. The elusive American naval forces were never located, and the *96 Rikko* bombers of the *Kisarazu* Naval Corps returned later in the afternoon with nothing to report but unidentified aircraft sightings. These had been the Doolittle raiders, arriving over Japan and striking at Tokyo, Yokohama, Osaka and Kobe, and Nagoya, less than half-an-hour after the Japanese patrol bombers were airborne. As the war moved away from Japan, the *Kisarazu* unit was sent to Timor, and by the middle of August 1942 was rushed to Rabaul to take part in the attacks against the American invaders at Guadalcanal.

Rabaul was the death bed of the *96 Rikko* as a first-line attack bomber. By October, five *96 Rikko* units had been sent there, partially equipped with the final Nakajima-built G3M3 Model 23 available by the autumn

Above. 96 Rikko bombers frequently appeared over the city throughout the day after 28 May 1938. These are from the Mihoro Naval Air Corps on Formosa. (Koku Jidai via Bueschel)

Below: Crews of the Mihoro Naval Air Corps prior to a mission over Canton, July 1938. (Shashin Shuho via Bueschel)



The Wuhan cities of Hankow and Wuchang on the Yangtze River also came under attack in the summer of 1938. (Shashin Shuho via Bueschel)

of 1942. When the IJ Naval air forces were reorganized at the end of that month, the *96 Rikko* units, rapidly being re-equipped with the G4M1 *1 Rikko*, lost their original names to have them replaced with unit numbers. The *Chitose*, *Genzan*, *Kisarazu*, *Misawa*, and 4th Combined Naval Air Corps, all ultimately at Rabaul, respectively became the 703rd, 755th, 707th, 705th, 702nd Naval Air Corps. Elsewhere, the *Kanoya*, *Mihoro*, *Takao* units became the 751st, 701st, and 753rd Naval Air Corps, with only the second-line training units in Japan retaining their original names. Newer Naval Air Corps combat units also received the *96 Rikko*; including the 772nd formed in 1944 for defence of the Philippines, ultimately becoming a special attack unit in Japan; and the specialized night-torpedo attack 762nd assigned to the Philippines in November 1944.

New uses for "Nell"

Removal of the *96 Rikko*, by now being called "Nell", from active combat use extended the dispersion of the aircraft to JNAF units, for by now these aircraft had become the standard "hack" transport, liaison, patrol and general purpose aircraft of the Japanese Navy. Virtually every major Naval Air Corps, no matter what the function from fighter to bomber, had one or more modified *96 Rikko* bombers on hand that were used as personnel transports. As a result, probably more JNAF pilots, crews, and ground crewmen flew in a "Nell" at one time or another than any single other type of Japanese aircraft.

While offensive bombing days were all but over for the *96 Rikko*, attempts were made to bring the existing airframes back into productive combat use. One such application was for the Japanese Navy's projected Special Naval Landing Forces, first formed as paratroop units, but later conceived as raiding units landed at key Allied positions in gliders. With progressive development of the Kugisho MXY5 assault glider, first as a low-priority theoretical project carrying 11 fully-armed assault troops started in August 1941 and test flown in February 1942, and later reinstated as a possible assault craft in 1944 as the MXY5a, the G3M3 was chosen as the glider tug. The project never went beyond the testing stage.

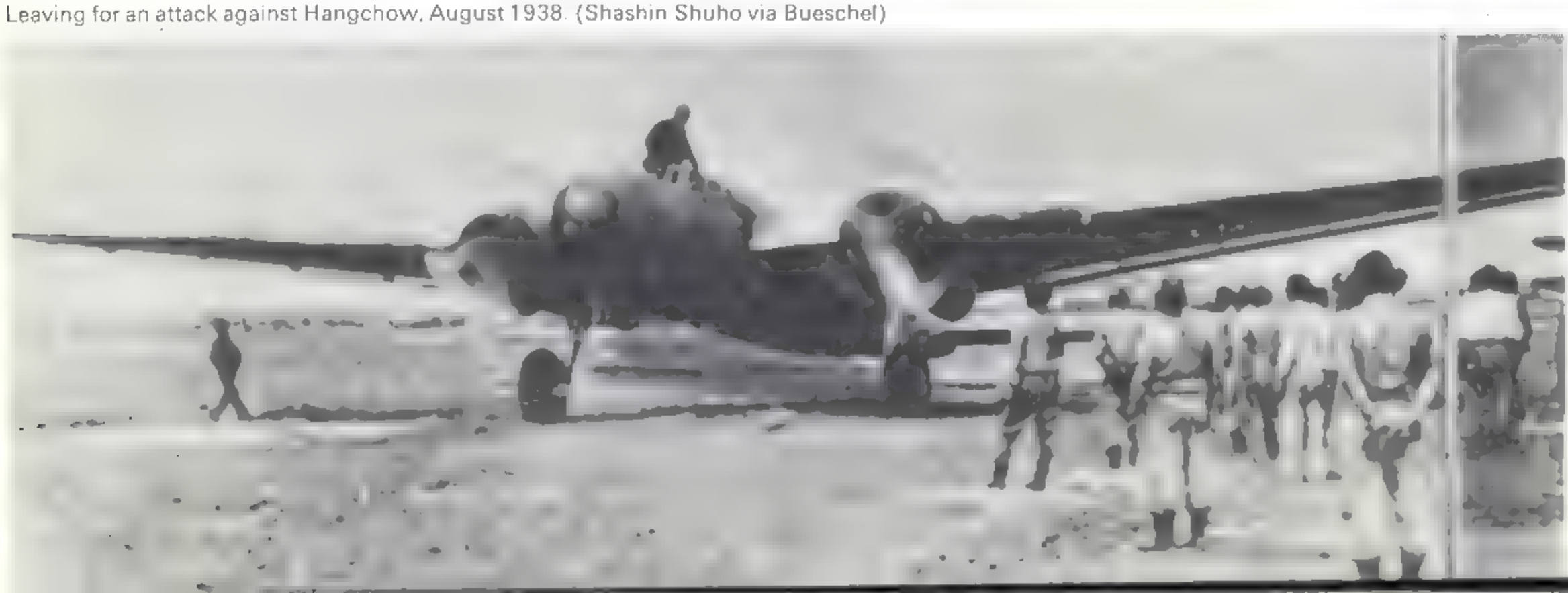
The most effective follow-on use for the "Nell" was in the anti-submarine patrol role, with modified G3M3 patrol aircraft serving with the 901st and 951st Naval Air Corps of the 1st Escort Fleet. Originally established as the 1st Escort Squadron of the Combined Escort Fleet in November 1943 to protect the shipping lanes from Singapore to the Japanese home islands, *96 Rikko* aircraft were among the first to be assigned to the convoy command due to their long-range capability. Stationed at bases along the route at Saigon, Singapore, Manila, Takao, Okinawa and Tateyama, as well as in Sumatra and at bases along the Chinese coast, about one half of the modified G3M3 Model 23 types carried radar. It was radar-equipped "Nell" patrol aircraft of the 901st Naval Air Corps stationed at Manila that first spotted the American fleet moving in for the Battle of the Philippine Sea on 24 October 1944.

When the organization was re-formed as the 1st Escort Fleet in July 1944, the first of about 20 of the magnetic detection (MAD) equipped Model 23 aircraft—reportedly designated G3M3-Q—appeared. The MAD-equipped bombers were highly successful, being capable of both detecting and attacking Allied submarines. Flying low over the water in a search pattern, patrol aircraft of the 901st Naval Air Corps are credited with locating and sinking up to 20 enemy submarines by the end of the war.

Serving in the transport role

The long-range and load-carrying advantages offered by a transport version of the *96 Rikko* series were recognized early in the aircraft's career. In 1937, the year after the 910 h.p. *Kinsei 3*-powered G3M1 Model 1 entered production, a transport version was created in

Leaving for an attack against Hangchow, August 1938. (Shashin Shuho via Bueschel)



Above: The Japanese retoucher has removed evidence of the two flat-topped dorsal turrets of this G3M2 Model 21 over the mountains of South China, August 1938. (Shashin Shuho via Bueschel)

Above: G3M2 Model 21 of the Mihoro Naval Air Corps used in the Canton attacks. (Sora via Bueschel)

Below: The Mihoro Naval Air Corps continued the attacks on Canton from Formosa throughout the summer of 1937. (Shashin Shuho via Bueschel)

the facilities of the 1st Naval Air Arsenal, then known as Kusho. Delivered to the JNAF as the L3Y1 Type 96 land transport, Model 11, the type was also known as the G3M1d and was known as the *96 Yu* in service. The narrow fuselage interior was cleaned out and fitted with windows along a single row of seats on each side to provide for ten passengers in addition to a crew of five. A single 7.7 mm. Type 92 MG was carried for defence in the event of interception. These modified high-speed transports shuttled VIP's to and from the Chinese mainland, and became the flying conference rooms and executive transports of ranking naval officers. Never built in large numbers, examples were supplied to the Fleet Detachment Air Squadron for communications with IJN bases on the coast of China in 1938, the *Yokosuka* Naval Air Test Centre, and Naval Air Headquarters in Tokyo. In 1942, with formation of the 11th Transport Fleet, virtually a military airline to maintain scheduled contact with Japan's ever-expanding ring of Pacific island bases, L3Y1 transports were assigned to twice-weekly flights between Tokyo and Rabaul, New Britain. Generally carrying command officers, and the ever-present inspecting politicians and desk-bound naval staff officers, the fast land transports also brought the mail for the Japanese naval forces stationed at Rabaul, and elsewhere in New Britain, New Ireland, the Solomons, and eastern New Guinea. Spotted once in a while on their direct link flights from Japan to Saipan to Rabaul and return, the transports were initially assigned the Allied code name "Tina". There were never more than three or four L3Y1 types assigned to the service, sharing the duties with converted transport versions of the G4M1 *1 Rikko* to make a total fleet of six aircraft. The service faltered and became sporadic in 1943 after the Allied victories in the Solomons, New Guinea and throughout Japan's Pacific perimeter. As Rabaul became completely isolated, with growing transport losses to cruising American aircraft, the service ended in April 1944. It was Rabaul's last dependable link with Japan, with mail and medical supplies to the beleaguered Japanese forces cut to a trickle.

The definitive transport version of the *96 Rikko* series was the Kusho L3Y2 Type 96 land transport, Model 12, also known as the G3M2d, making its appearance in the summer of 1939. The L3Y2 was derived from the G3M2 Model 21 airframe, although it mounted the more powerful *Kinsei 45* radials of the later G3M2 Model 22. Capacity and armament remained the same as the L3Y1, although the L3Y2 was faster. The newer L3Y2 became the prime VIP and base transport of the JNAF, including assignment to the *Yokosuka* Naval Air Test Centre, the *Tsingtao* Base Squadron on the Chinese coast, the *Yokohama* Naval Air Corps, South-eastern Fleet Headquarters, and ultimately almost every naval air corps on overseas assignment. At Rabaul alone, one or two were generally assigned to each naval air corps in the area for specialized delivery of orders, critical small parts and personnel. Units, among others, that had *96 Yu* transports on their inventory were the 201st, 204th, 221st, and 253rd Fighter; 501st and 552nd Attack; 801st, 938th and 958th Reconnaissance and the 1001st and 1006th Transport Naval Air Corps.

The most specialized use of the L3Y2 was as a paratroop transport, assigned to the 12th Paratroop Transport Naval Air Corps beginning in 1940. The paratroop *96 Yu* transports were used in the training of the Special Naval Landing Force, a highly-skilled invasion force trained to drop on enemy airfields far ahead of the Japanese land forces and secure the area for immediate occupation and use by IJN air units. At the time of Pearl Harbour the 600 paratroops of the two units of the Special Naval Landing Force were ready for combat, with the L3Y2 serving as the combat drop transport. The first use was on 11 January 1942 when 20 of the L3Y2 transports flying from Darao, dropped their charges on the airfield at Menado in the Philippines. Barely over a month later, on 20 February, the 12th Paratroop Transport Naval Air Corps made a second equally effective drop at Koepang, on the island of Timor, northwest of Australia. For some unknown reason this was the last time the Special Naval Landing Force saw combat as a paratroop unit in the Pacific War, having taken part in only two operations.

Naval bomber to civil transport

The very attributes that made the long-range *96 Rikko* an effective military transport also had civil applications once *Nippon Koku K.K.* (Japan Air Lines) had been reformed as *Dai Nippon Koku K.K.* (Greater Japan Air Lines) with international routes into Chosen (Korea), China, South-east Asia and the Pacific Mandate Islands. Both cargo and eight-passenger versions of the *Kinsei 41* powered Mitsubishi two-engine civil transport (*So-Yu*), Model 1 utilizing a modified G3M2 Model 21 fuselage began to enter service in 1938. As an example of indigenous Japanese aircraft design, the civil versions of the *96 Rikko* series also offered an opportunity to carry the Japanese flag to the outside world to demonstrate Japan's rising international role as well as the capabilities of Japanese technology. In April 1939 a Greater Japan Air Lines *Soyu* Model 1 transport, licenced J-BEOA and named *Soyokaze* (Zephyr), flew from Tokyo over India to Teheran in the Middle East, and return. Earlier, late in 1937, *Mainichi Shimbun* (The Mainichi Press) had petitioned the Imperial Navy to obtain release of the original Mitsubishi Ka-9 G1M1 prototype—still flying as an experimental power plant test bed—for a Mainichi-sponsored civil round-the-world flight to surpass the Tokyo-to-London flight of its competitor, *Asahi Shimbun* (The Asahi Press) in a civil licenced Japanese Army Ki.15 prototype in April 1937. It wasn't until late 1938 that the Imperial Navy favoured Mainichi's request, offering the more modern G3M2 Model 21 as a substitute. Aircraft No. 328 on the Mitsubishi production line was accepted and purchased by *Mainichi Shimbun*, and modification work for the flight immediately. Fuel capacity was enlarged; the interior was converted to carry passengers, civil landing equipment was installed, and the bottom fuselage line was rebuilt to provide more internal room by removing the ventral turret position and fairing the fuselage line straight back. By July 1939 the aircraft was in shape and familiarization training of its seven crewmen got underway. On 3 August, the aircraft was christened *Nippon* (Japan) in a ceremony at Tokyo's Haneda Airport. Under command of Crew-Capt. Sumitoshi Nakao (who later became the President of Tokyo International Airport in the middle 1950's), the J-BACI registered *Nippon* left Japan on 27 August 1939, reaching Seattle, Washington, as the news of the outbreak of World War II in Europe burst upon the world. Re-routing its trip south to avoid Europe by crossing South America and Africa, the *Nippon* returned to Japan on 20 October after covering 32,850 miles (52,860 km.). More than any demonstration yet made, the flight of the *Nippon* proved that Japanese bombers could strike halfway across the Pacific, or deep into the Asiatic mainland. But the message was lost. Over two years later, after Pearl Harbour, Japanese bombers were still reported as lower performing copies of European types, yet no such Japanese aircraft ever flew combat missions in the Pacific War.

The modification work on the *Nippon* was significant in terms of future *96 Rikko* bomber and *Soyu* civil transport development. The new fuselage line was incorporated into production military aircraft, starting with airframe No. 399 at Mitsubishi in August 1939 as the G3M2 Model 22; and future production of civil cargo and passenger models utilized the fuselage as the *Soyu* Model 2. In all, a total of 24 civil *Soyu* transports were produced, with all of them converted from military airframes. They served Greater Japan Air Lines throughout the Pacific War, to be joined during the later war years by civil-licenced examples of converted *96 Rikko* bombers and *96 Yu* transports. Plans to utilize the civil *Soyu* transports as tow planes for a string of freight gliders late in the war period were pursued, but ultimately dropped. A few military and civil examples survived the war to fly in green-cross surrender markings until October 1945, when the last "Nells" were cut up and burned to completely eliminate Japan's military potential.

Above: The Kanoya Naval Air Corps crossing the mountains to Chungking, autumn 1940. (Sekai no Kokuki via Bueschel)

Right: Chungking next stop! (Shashin Shuho via Bueschel)

Below: The Kisarazu Naval Air Corps begins a mission, July 1940. (Asahigraph via Bueschel)

Above. By summer 1940 four 96 Rikko units—the Kanoya, Takao, 13th and 15th Combined Naval Air Corps—were flying in raids against Chungking (Shashin Shuho via Bueschel)

Attacks were by day, and night. (Shashin Shuho via Bueschel)

Wave-off for take-off, September 1940. (Shashin Shuho via Bueschel)

Above: Model 218 of the Naval Aircraft Factory [illegible] Mitsubishi

Above: [illegible] Model [illegible] Japanese [illegible] Mitsubishi Ryoko-sen Hikoki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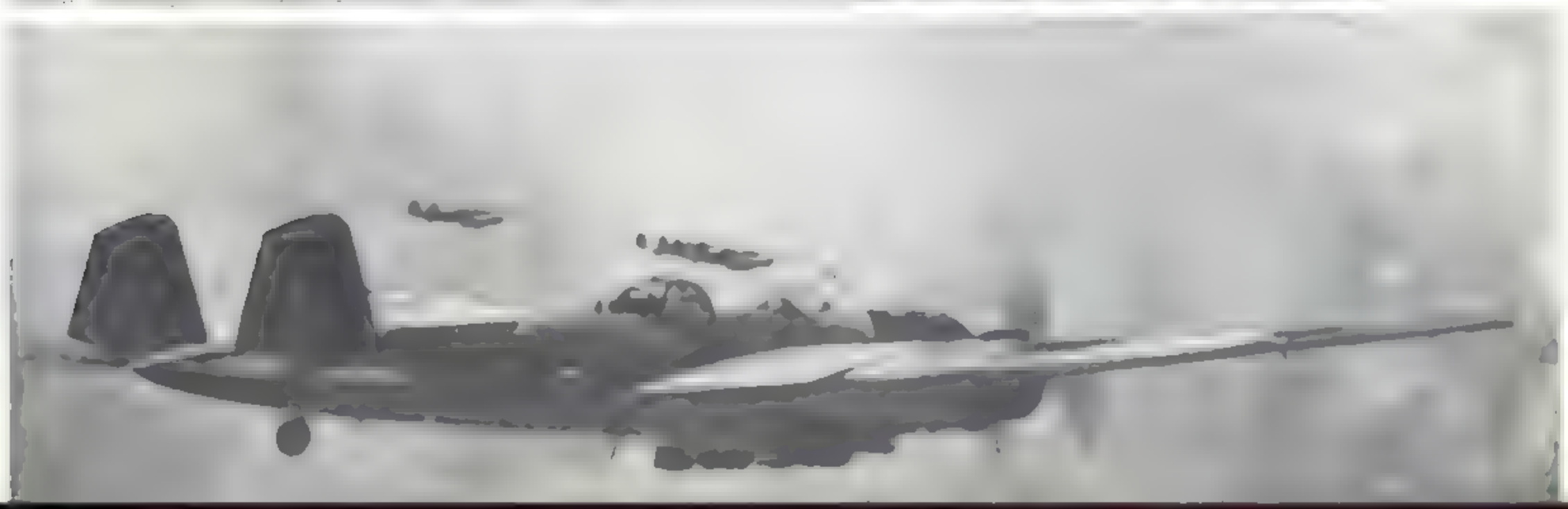
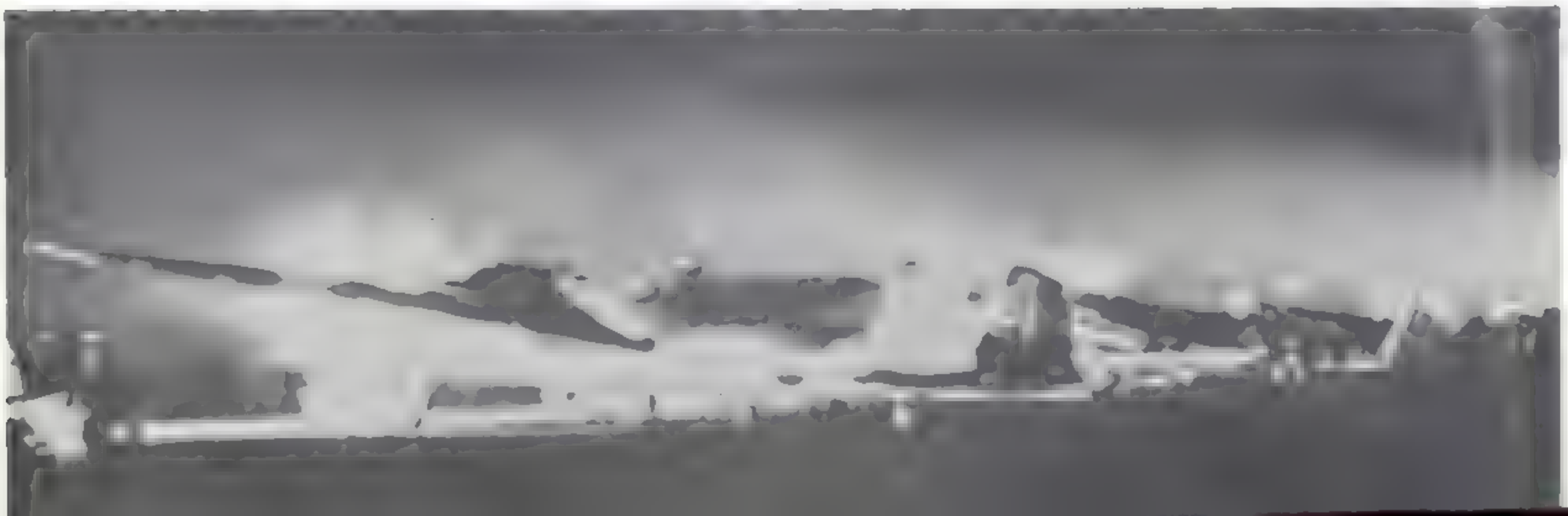
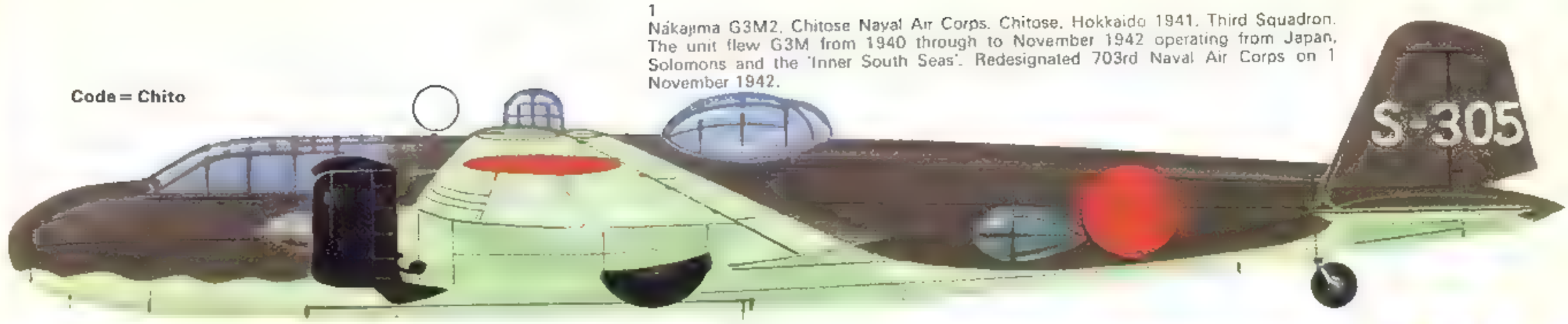




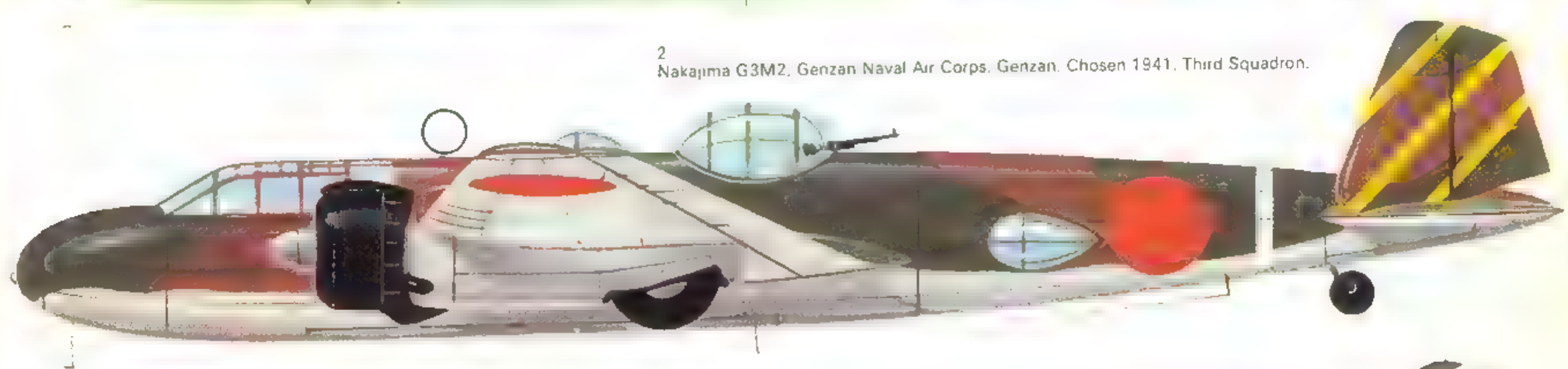
A

1
Nákajima G3M2. Chitose Naval Air Corps. Chitose. Hokkaido 1941. Third Squadron. The unit flew G3M from 1940 through to November 1942 operating from Japan, Solomons and the 'Inner South Seas'. Redesignated 703rd Naval Air Corps on 1 November 1942.

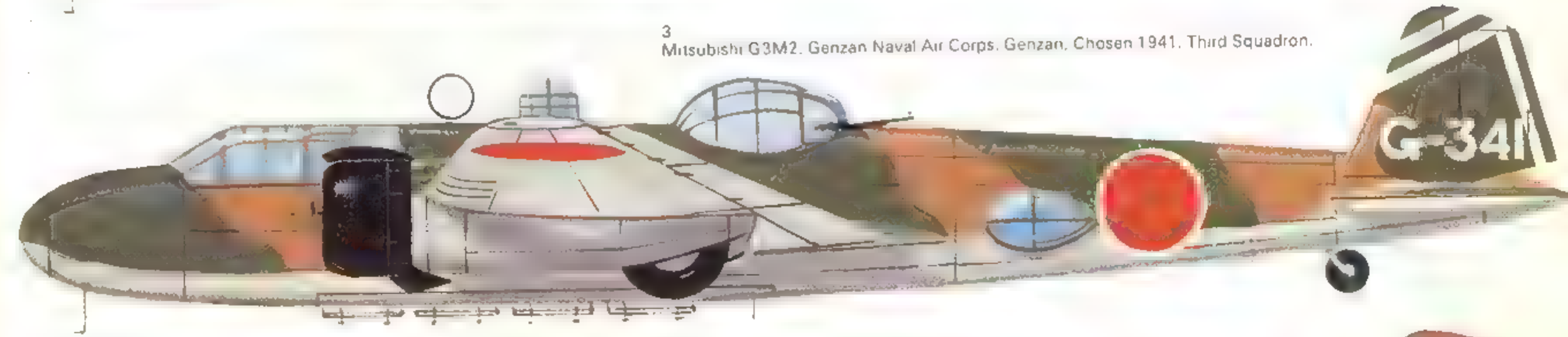
Code = Chito



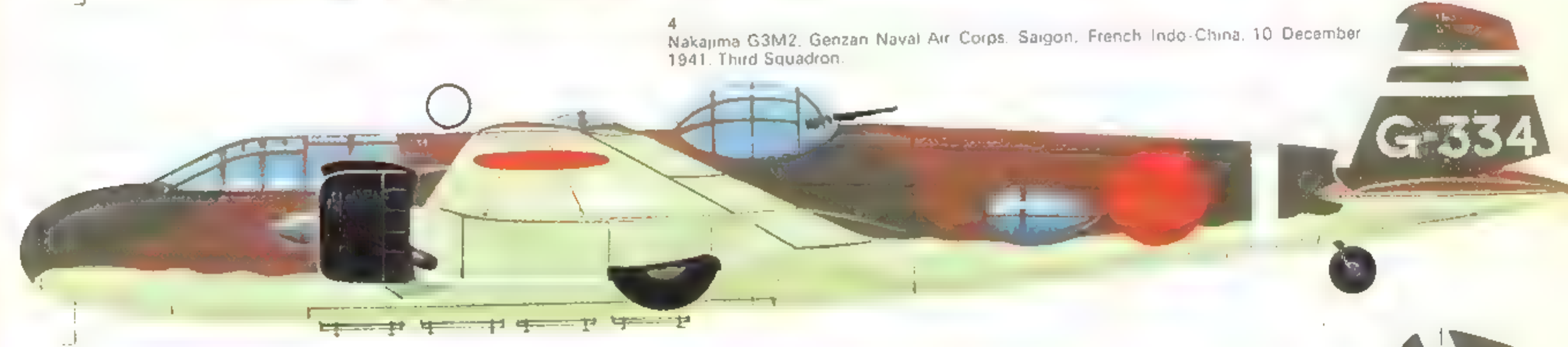
2
Nakajima G3M2. Genzan Naval Air Corps. Genzan. Chosen 1941. Third Squadron.



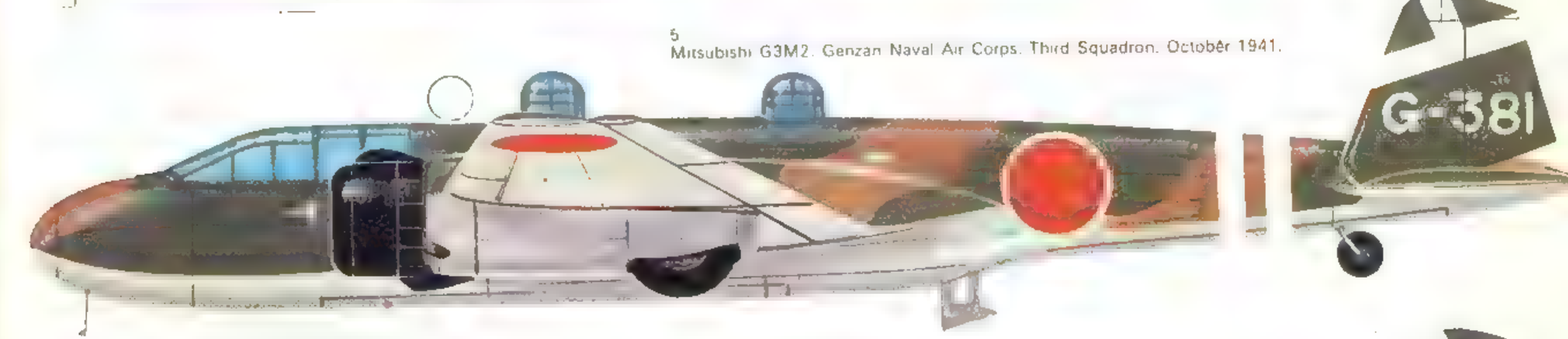
3
Mitsubishi G3M2. Genzan Naval Air Corps. Genzan. Chosen 1941. Third Squadron.



4
Nakajima G3M2. Genzan Naval Air Corps. Saigon. French Indo-China. 10 December 1941. Third Squadron.



5
Mitsubishi G3M2. Genzan Naval Air Corps. Third Squadron. October 1941.

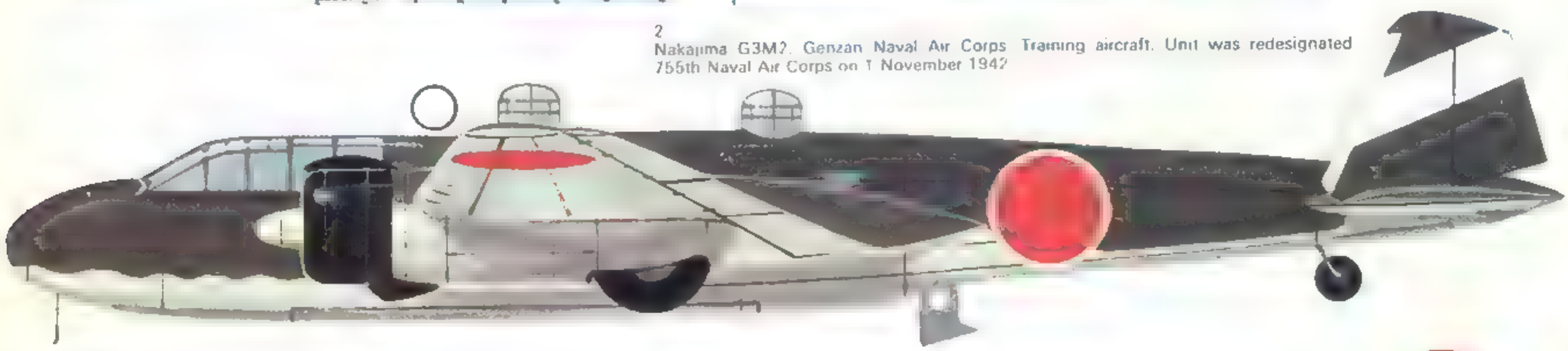


6
Mitsubishi G3M2. Genzan Naval Air Corps. Third Squadron. October 1941.

B

1
Mitsubishi G3M2. Genzan Naval Air Corps. Saigon. French Indo-China. 10 December 1941. Second Squadron.

2
Nakajima G3M2. Genzan Naval Air Corps. Training aircraft. Unit was redesignated 755th Naval Air Corps on 1 November 1942

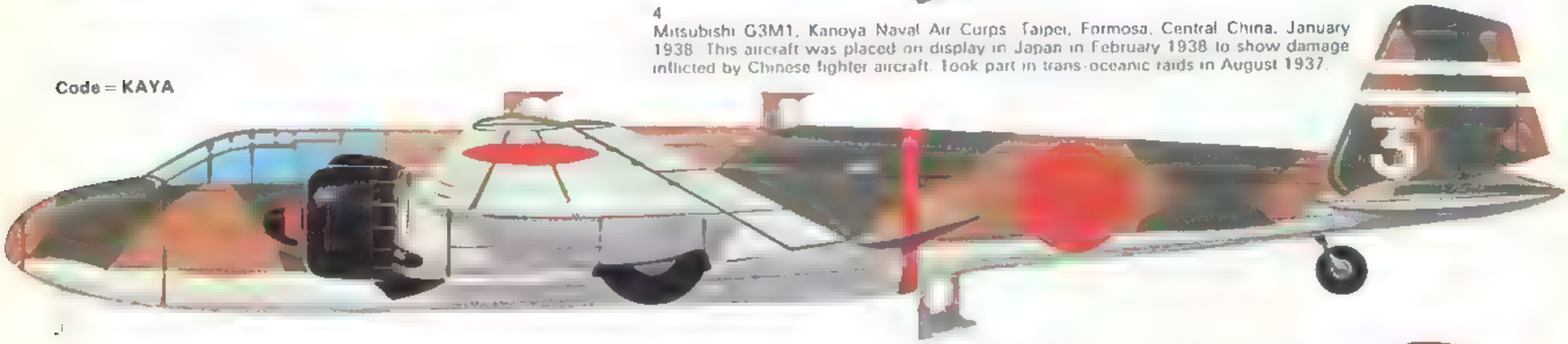


3
Mitsubishi G3M1. Kanoya Naval Air Corps. Taipei. Formosa. April 1936–1937

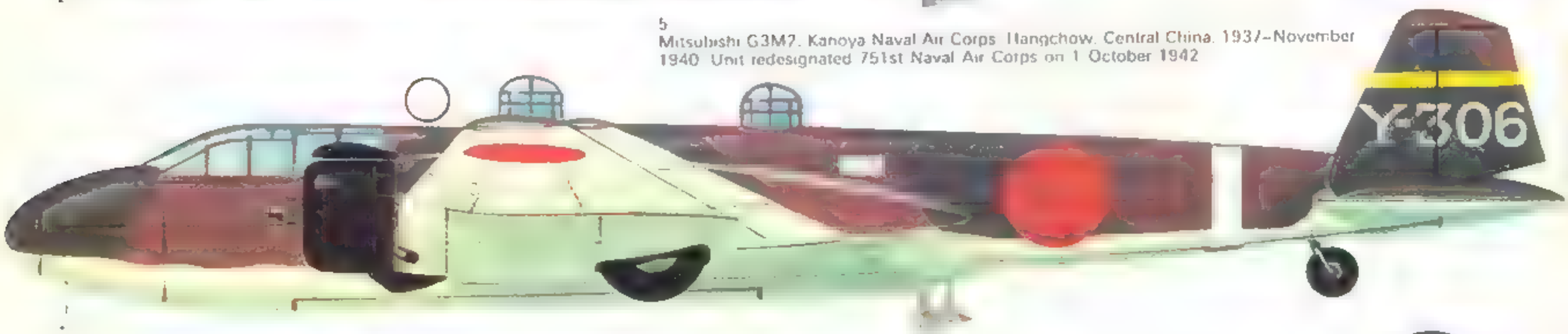
Code = KE カヤ

4
Mitsubishi G3M1. Kanoya Naval Air Corps. Taipei. Formosa. Central China. January 1938. This aircraft was placed on display in Japan in February 1938 to show damage inflicted by Chinese fighter aircraft. Took part in trans-oceanic raids in August 1937.

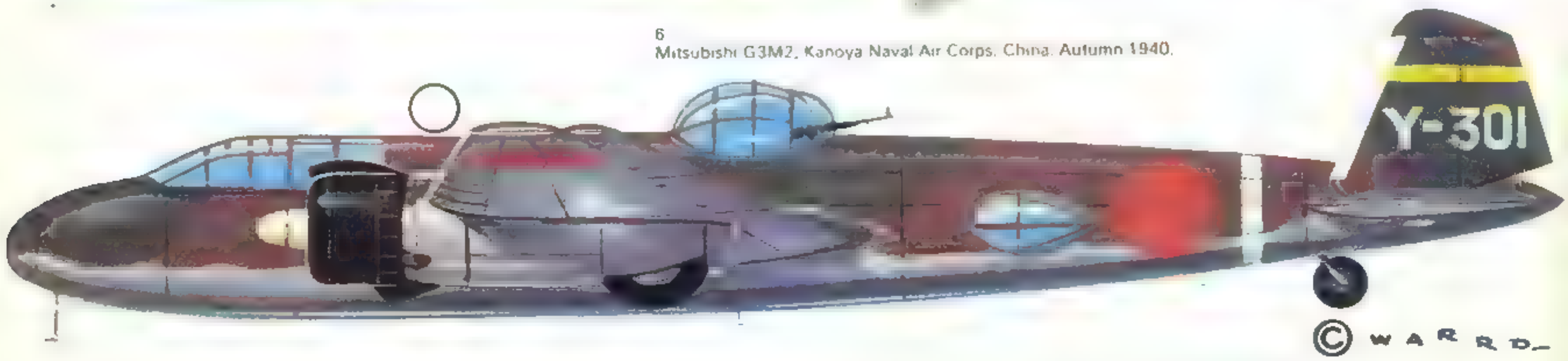
Code = KAYA



5
Mitsubishi G3M2. Kanoya Naval Air Corps. Hangchow. Central China. 1937–November 1940. Unit redesignated 751st Naval Air Corps on 1 October 1942

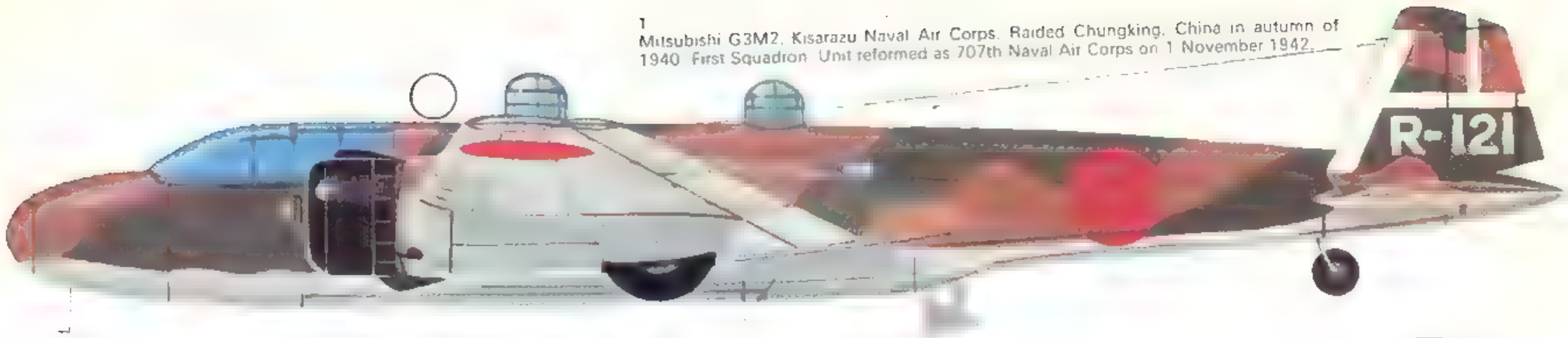


6
Mitsubishi G3M2. Kanoya Naval Air Corps. China. Autumn 1940.

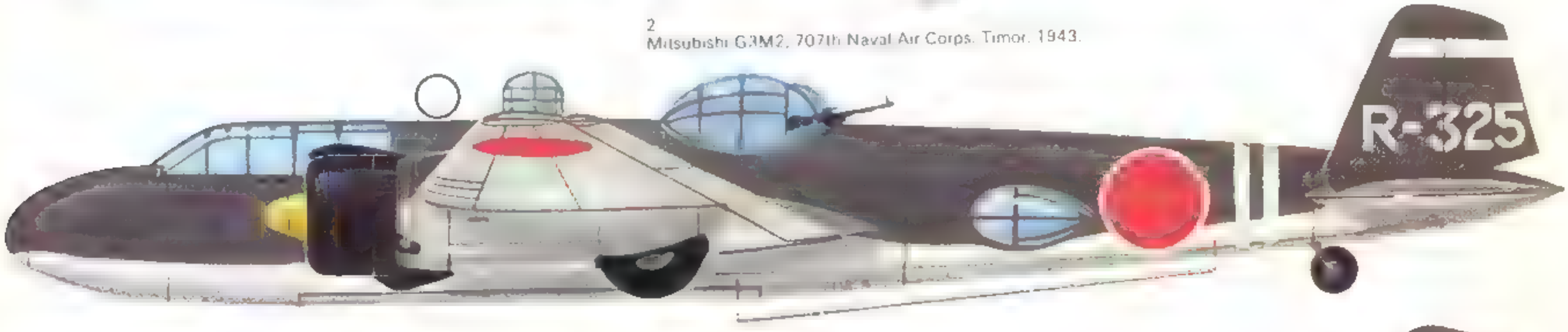


c

1
Mitsubishi G3M2, Kisarazu Naval Air Corps. Raided Chungking, China in autumn of 1940. First Squadron. Unit reformed as 707th Naval Air Corps on 1 November 1942.

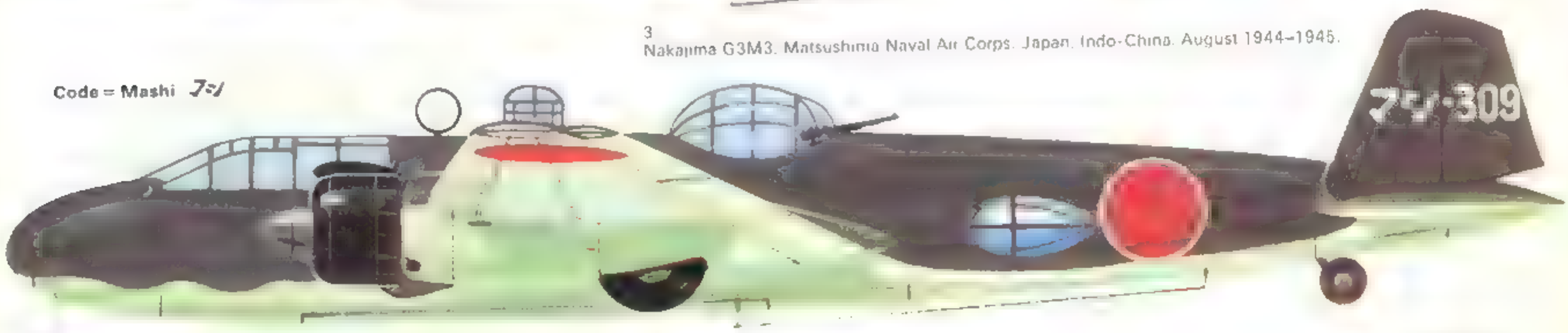


2
Mitsubishi G3M2, 707th Naval Air Corps. Timor, 1943.



3
Nakajima G3M3, Matsushima Naval Air Corps. Japan, Indo-China. August 1944–1945.

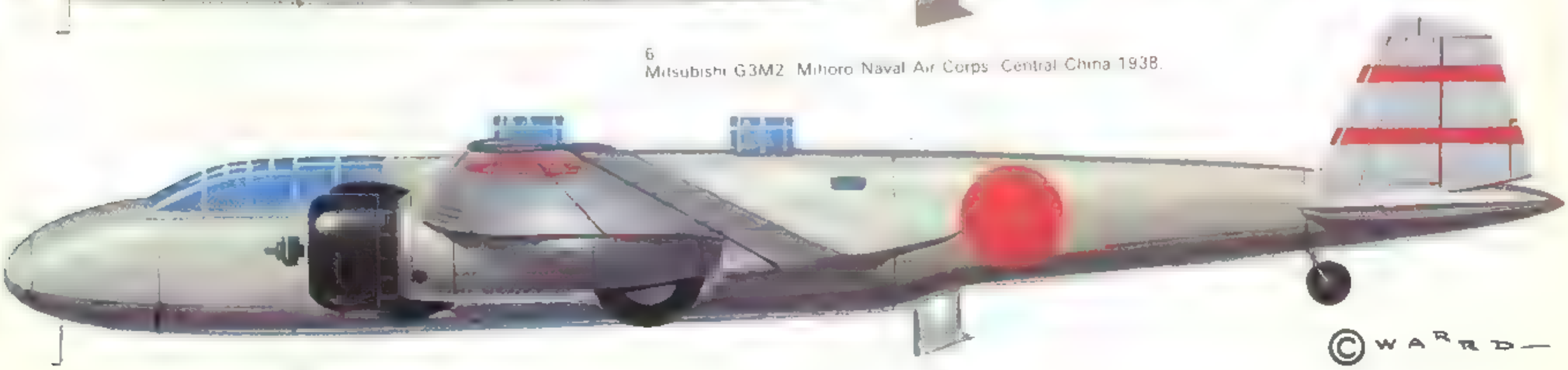
Code = Mashi マシ



4
Mitsubishi G3M2. Mihoro Naval Air Corps. Taipei, Formosa. June 1938

5
Mitsubishi G3M2. Mihoro Naval Air Corps. Central China 1938–1939

6
Mitsubishi G3M2. Mihoro Naval Air Corps. Central China 1938.



D

1
Mitsubishi G3M2, Mihoro Naval Air Corps. Central China. Spring 1941.

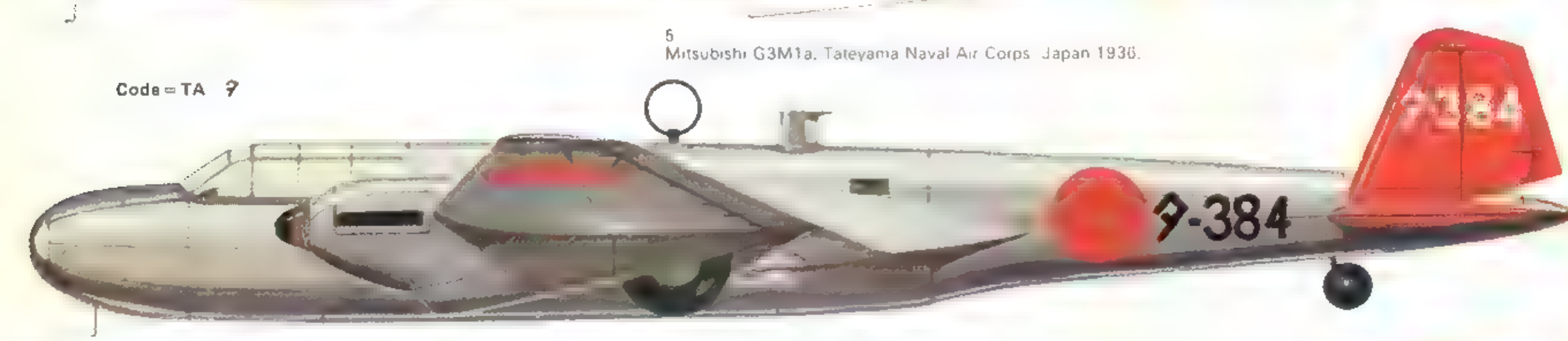
2
Mitsubishi G3M2, Mihoro Naval Air Corps. Thudaumot, French Indo-China. Late October 1941.

3
Nakajima G3M2, Mihoro Naval Air Corps. Tinian, Marianas. May 1942.

4
Nakajima G3M2, Misawa Naval Air Corps. Japan and Rabaul 1942; Keviang, New Ireland. June 1942. Crew training and transport

5
Mitsubishi G3M1a, Tateyama Naval Air Corps. Japan 1936.

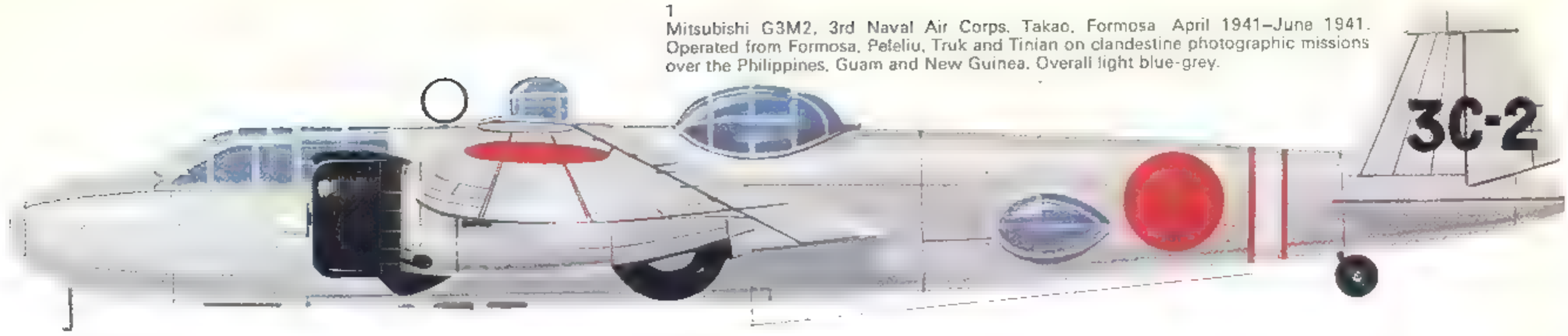
Code = TA ﾀ



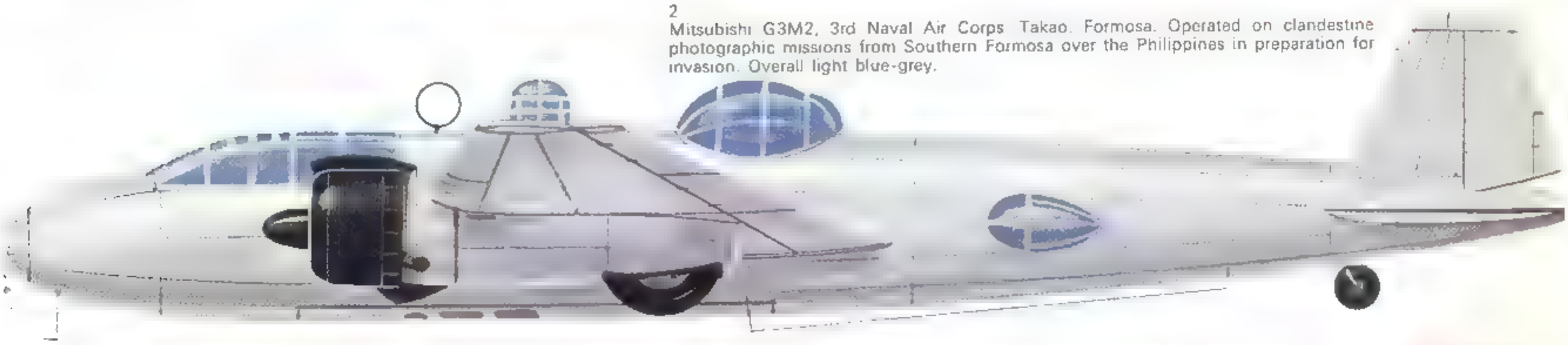
6
Mitsubishi G3M1c, Tateyama Naval Air Corps. Japan 1936.

E

1
Mitsubishi G3M2, 3rd Naval Air Corps, Takao, Formosa April 1941–June 1941. Operated from Formosa, Peleliu, Truk and Tinian on clandestine photographic missions over the Philippines, Guam and New Guinea. Overall light blue-grey.



2
Mitsubishi G3M2, 3rd Naval Air Corps Takao, Formosa. Operated on clandestine photographic missions from Southern Formosa over the Philippines in preparation for invasion. Overall light blue-grey.

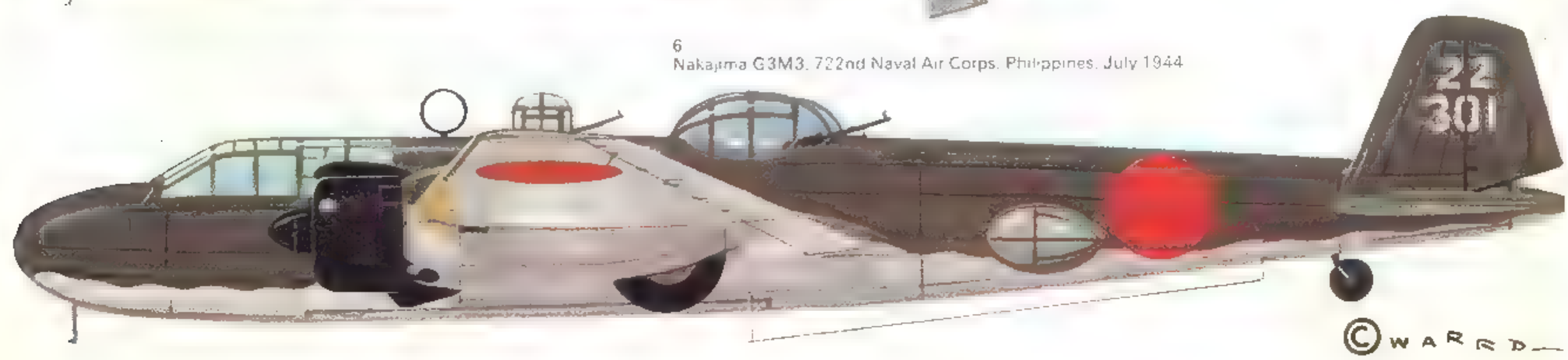


3
Nakajima G3M2, 3rd Naval Air Corps, French Indo-China, July 1941.

4
Mitsubishi G3M2, 3rd Naval Air Corps Bataan, Philippines May 1942

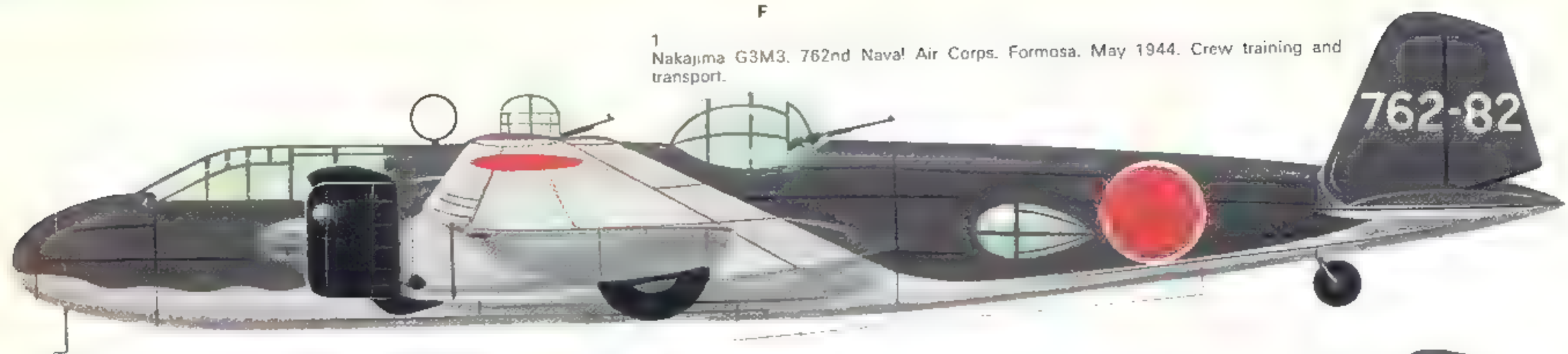
5
Mitsubishi G3M2, 13th Naval Air Corps, China, June 1940.

6
Nakajima G3M3, 722nd Naval Air Corps, Philippines, July 1944

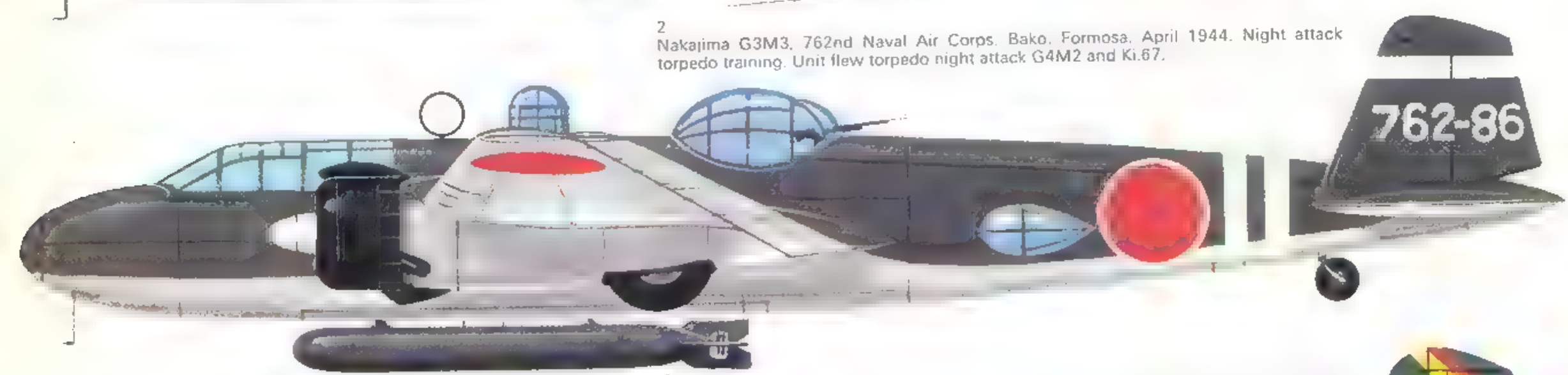


F

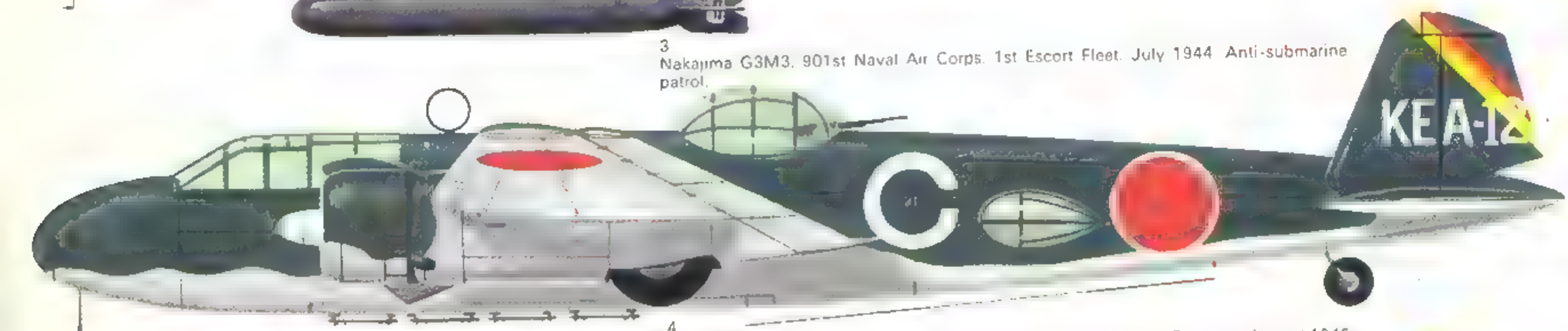
1
Nakajima G3M3. 762nd Naval Air Corps. Formosa. May 1944. Crew training and transport.



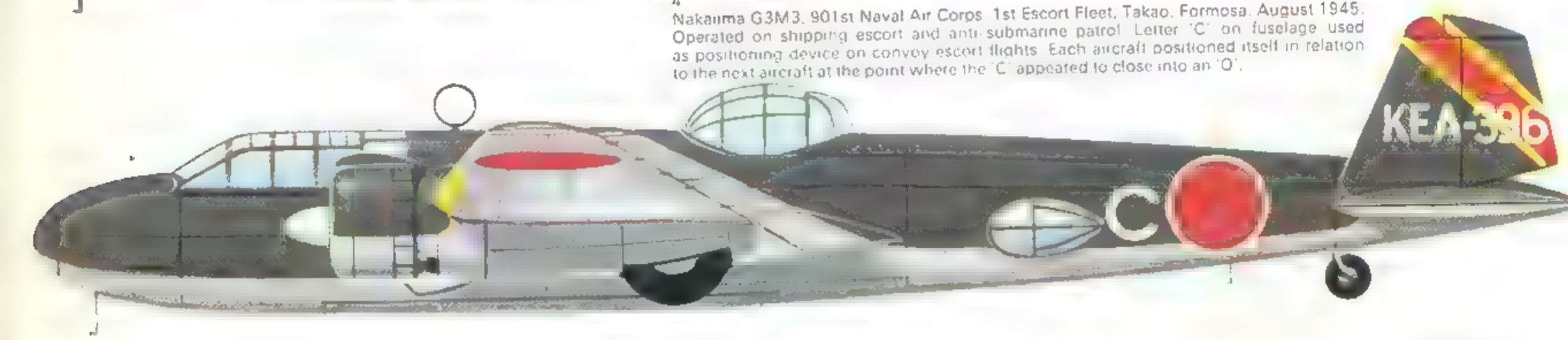
2
Nakajima G3M3. 762nd Naval Air Corps. Bako. Formosa. April 1944. Night attack torpedo training. Unit flew torpedo night attack G4M2 and Ki.67.



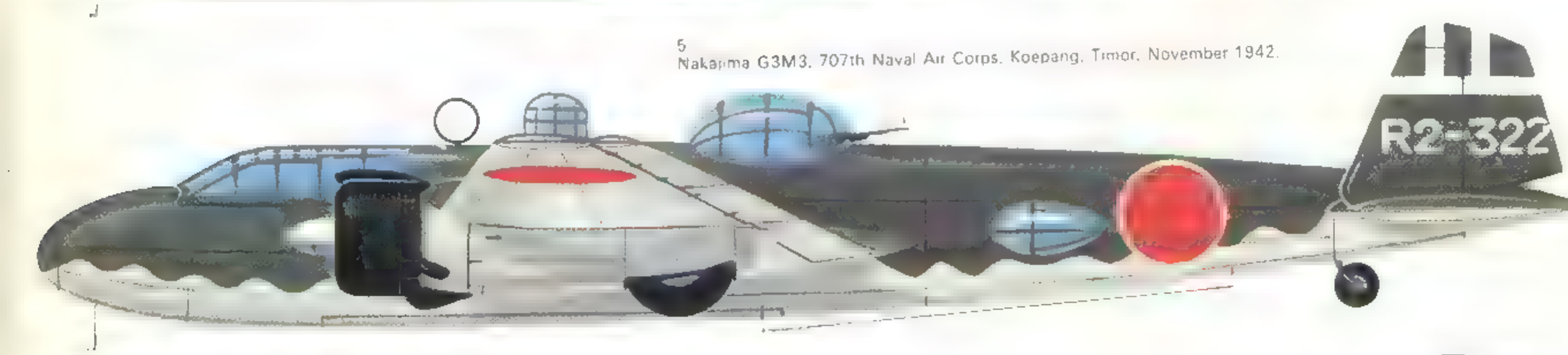
3
Nakajima G3M3. 901st Naval Air Corps. 1st Escort Fleet. July 1944. Anti-submarine patrol.



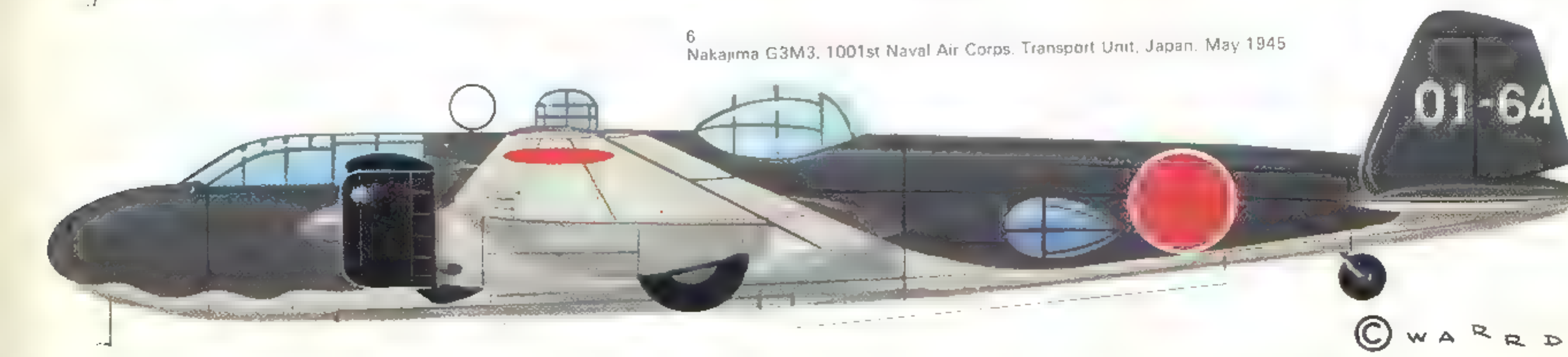
4
Nakajima G3M3. 901st Naval Air Corps. 1st Escort Fleet. Takao. Formosa. August 1945. Operated on shipping escort and anti-submarine patrol. Letter 'C' on fuselage used as positioning device on convoy escort flights. Each aircraft positioned itself in relation to the next aircraft at the point where the 'C' appeared to close into an 'O'.



5
Nakajima G3M3. 707th Naval Air Corps. Koepang. Timor. November 1942.



6
Nakajima G3M3. 1001st Naval Air Corps. Transport Unit. Japan. May 1945



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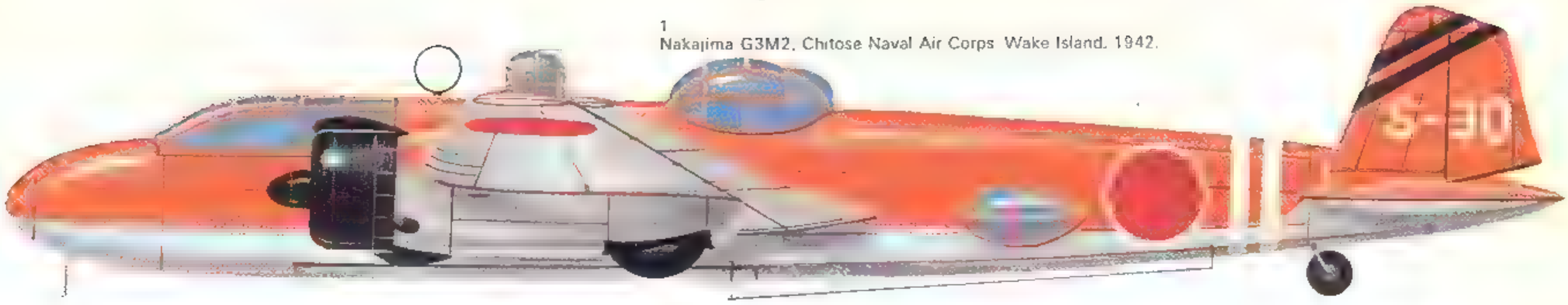
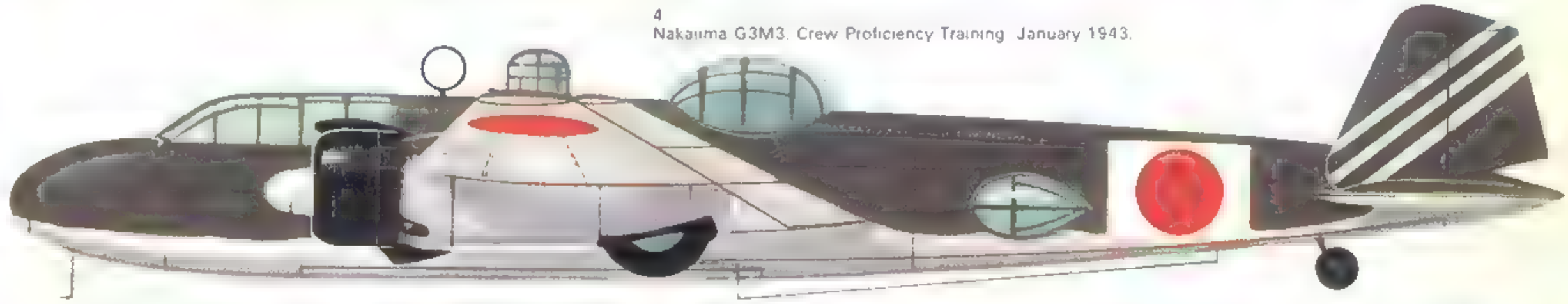
1
Nakajima G3M2, Chitose Naval Air Corps Wake Island, 1942.



2
Mitsubishi G3M2, Atsugi, Japan, September 1942, Base Transport.

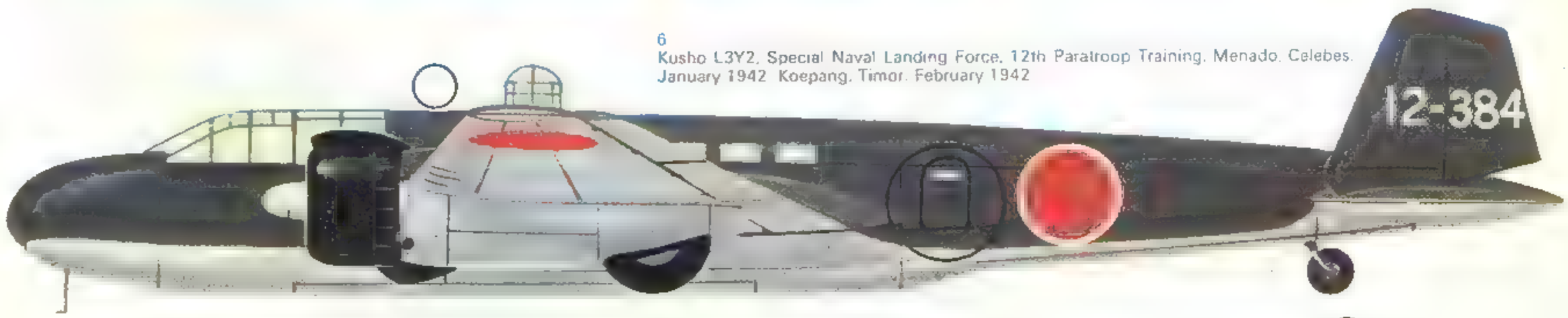
3
Nakajima G3M3, Kokosuka Naval Air Corps, Atsugi, Japan, August 1945, Personnel transport.

4
Nakajima G3M3, Crew Proficiency Training January 1943.

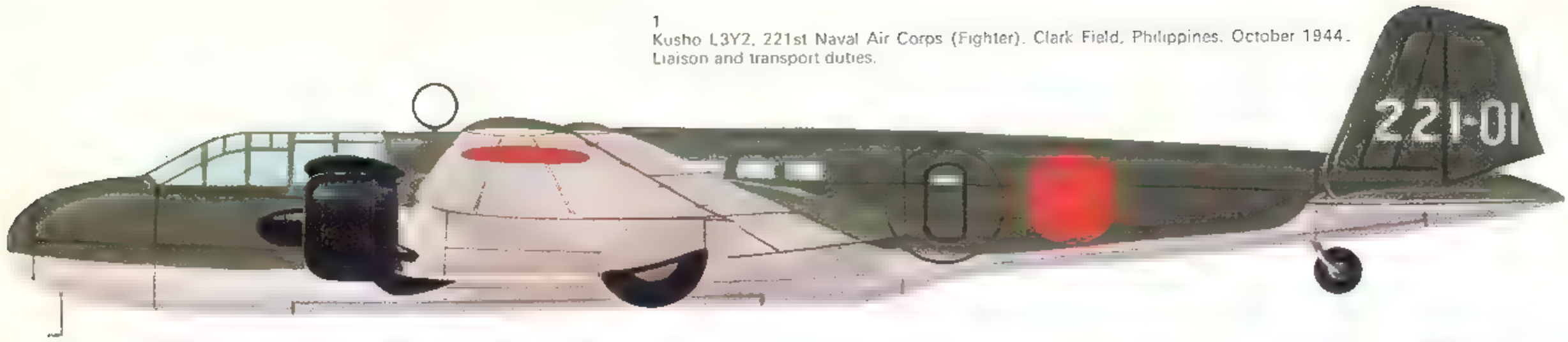


5
Kusho L3Y1, Fleet Detached Air Squadron, China 1938–1939

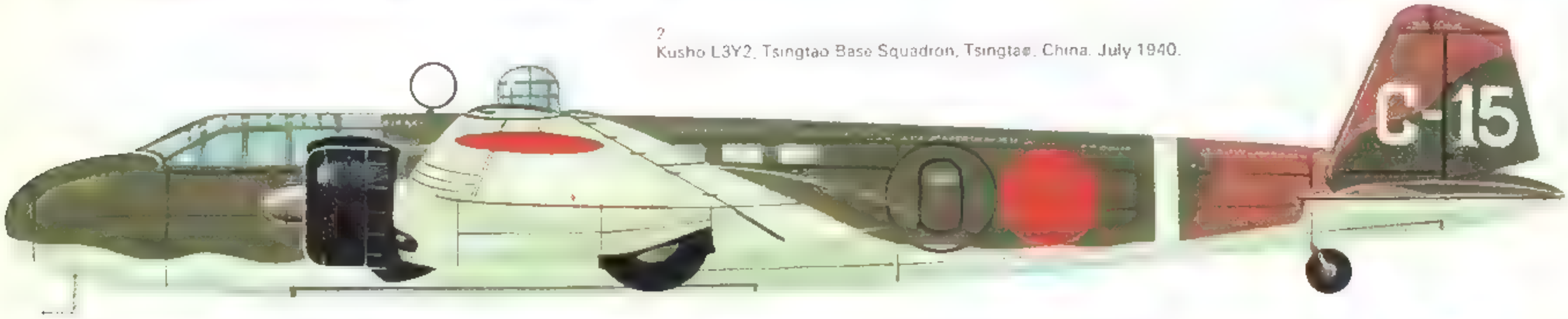
6
Kusho L3Y2, Special Naval Landing Force, 12th Paratroop Training, Menado, Celebes, January 1942 Koepang, Timor, February 1942



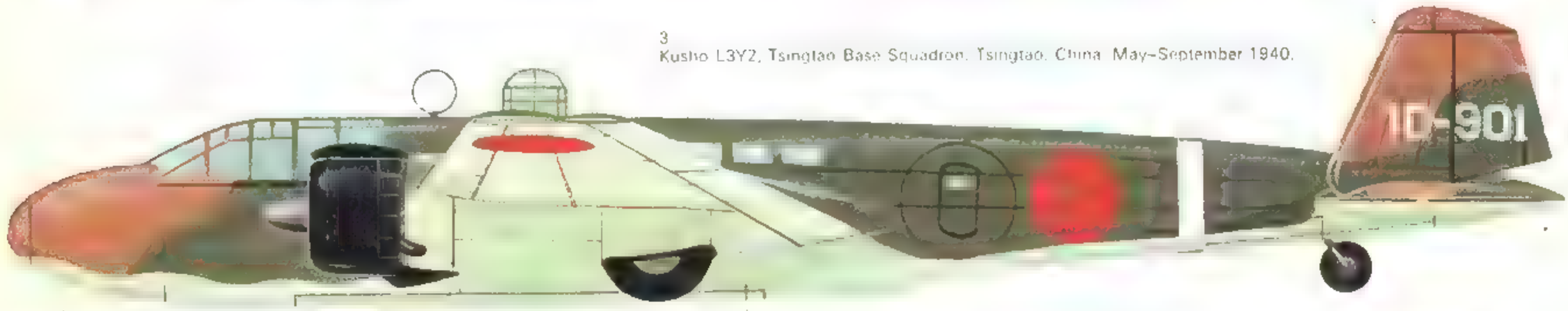
1
Kusho L3Y2, 221st Naval Air Corps (Fighter). Clark Field, Philippines. October 1944. Liaison and transport duties.



2
Kusho L3Y2, Tsingtao Base Squadron, Tsingtao, China. July 1940.



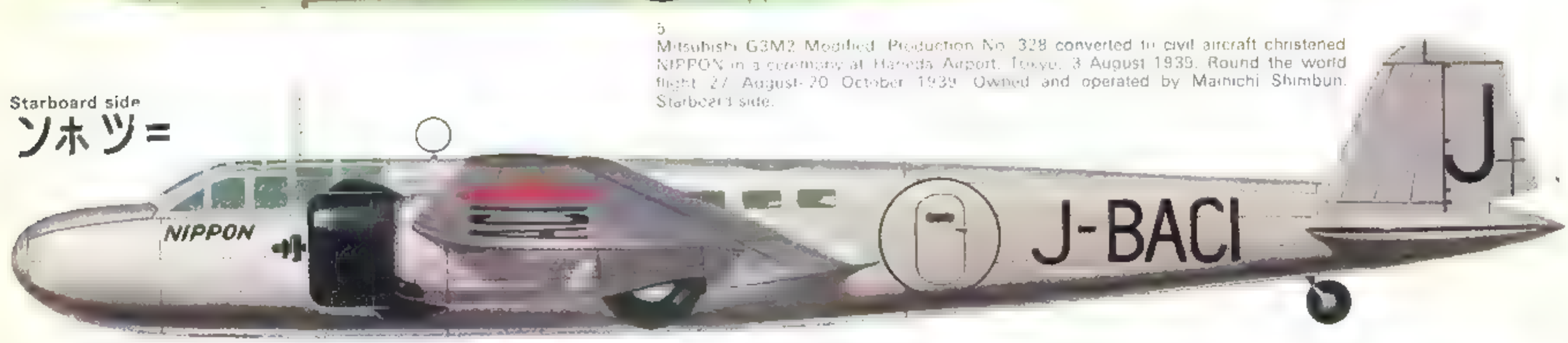
3
Kusho L3Y2, Tsingtao Base Squadron, Tsingtao, China. May–September 1940.



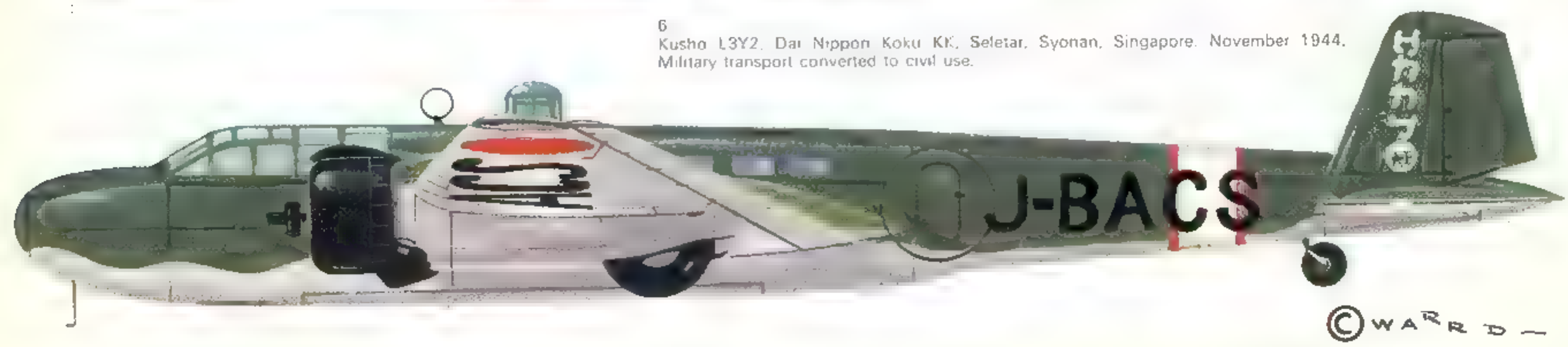
4
Nakajima G3M3. Surrender markings, formerly of the 951st Naval Air Corps. Sumatra September 1945

5
Mitsubishi G3M2 Modified. Production No. 328 converted to civil aircraft christened NIPPON in a ceremony at Haneda Airport, Tokyo, 3 August 1939. Round the world flight 27 August–20 October 1939. Owned and operated by Mainichi Shimbun. Starboard side.

Starboard side
ソホツ=



6
Kusho L3Y2. Dai Nippon Koku KK, Seletar, Syonan, Singapore. November 1944. Military transport converted to civil use.



Above: G3M2 Model 22 cockpit. (Asahigraph via Bueschel)

Above: Side-blister gunner doubles as navigator. (Koku Asahi via Bueschel)

Left: Top "Turtle-back" blister turret. (Asahigraph via Bueschel)

Below: The Genzan Naval Air Corps was at the peak of efficiency when war came, 8 December 1941. (Koku Asahi via Bueschel)

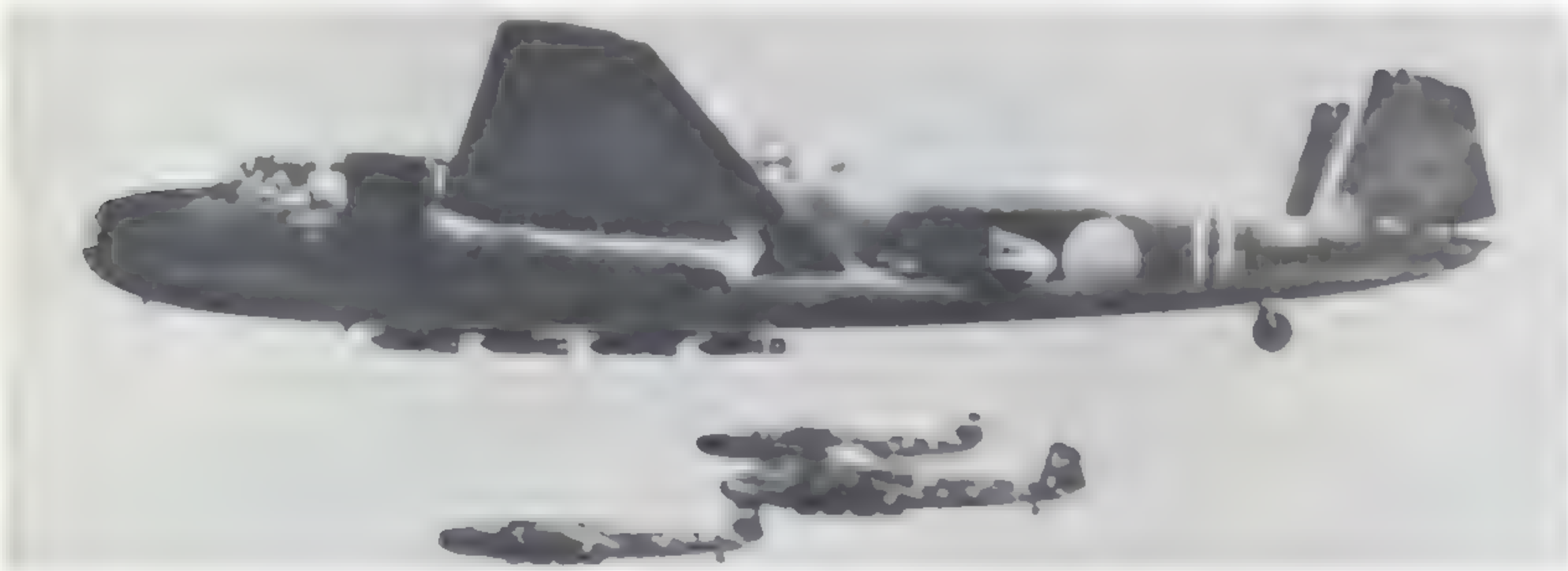
Below: French Indo-China maintenance, late November 1941. (Sekai no Kokuki via Bueschel)

3rd Squadron, Genzan Naval Air Corps, December 1941. (IJN via Bueschel)

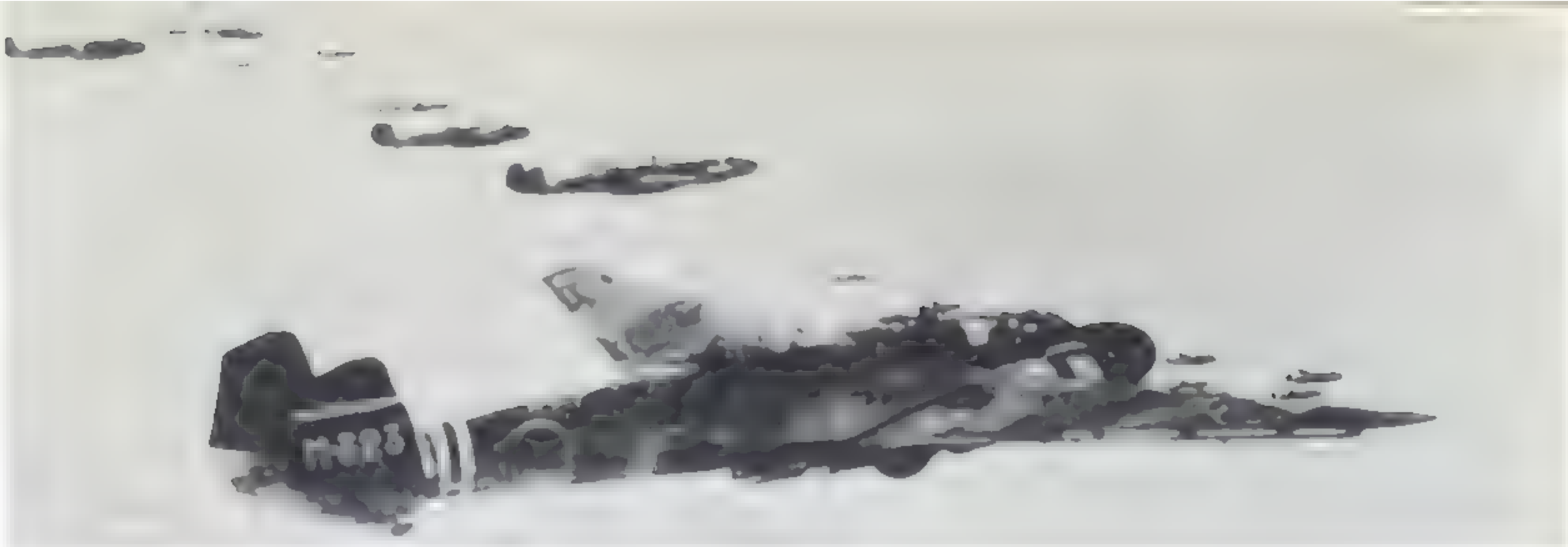
Above: "Victory Fever", early 1942. (IJN via Bueschel)

Below: 96 Rikko Model 22 K–308 of Kanoya Naval Air Corps "Champions of the Navy" unit, late 1941. (Sekai no Tsubasa via Bueschel)

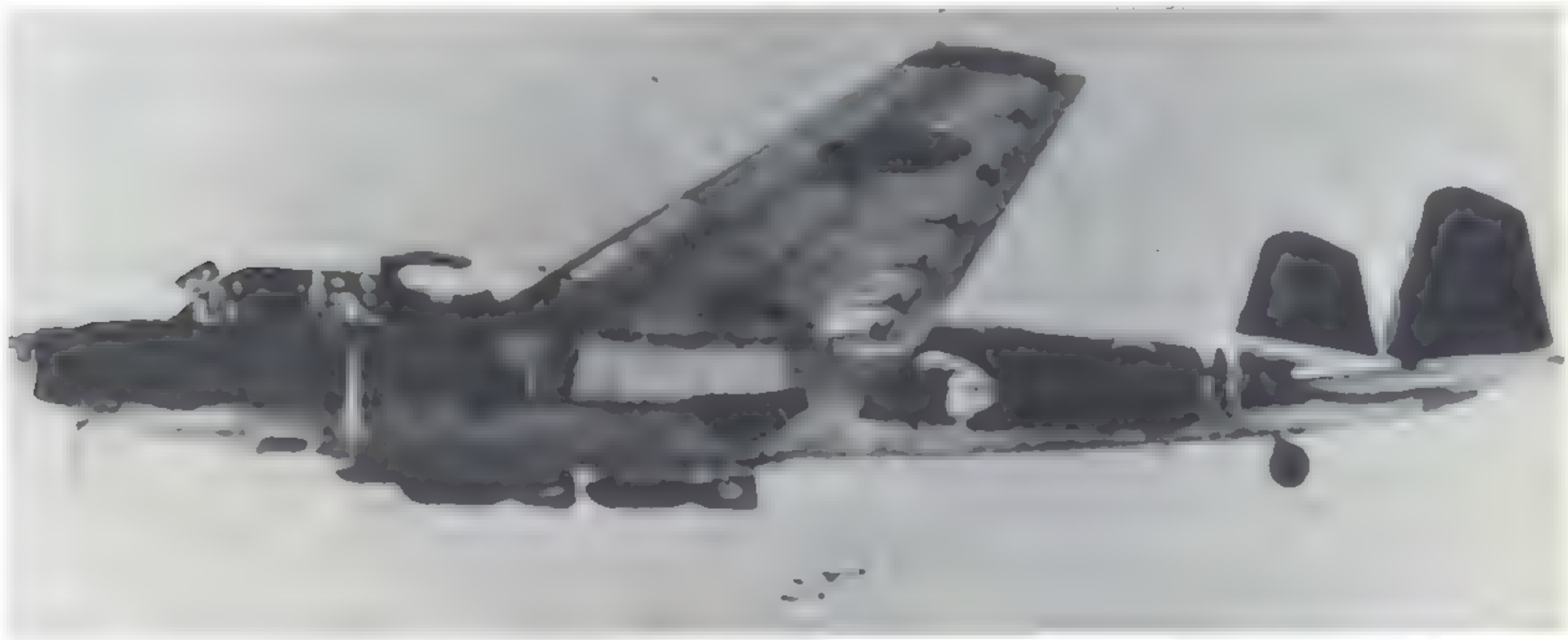
Below: Model 22 of Kanoya Naval Air Corps. Censor has removed markings. (Sekai no Kokuki via Bueschel)



Below: Aileron mass balance is evident in this flight photograph. (Sekai no Kokuki via Bueschel)



Above: 96 Rikko bombers of the Mihoro Naval Air Corps were stationed at Tinian in the Marianas in the spring of 1942. (Bergen Hardesty via Bueschel)



Above: With assignment of the Allied code names, the 96 Rikko became known as "Nell". (Asahigraph via Bueschel)

Right: The Model 22 was a workhorse of the Malayan campaign, frequently raiding Singapore. (Koku Jidai via Bueschel)

96 Rikko units were initially retained in the Japanese home islands early in the Pacific War for maritime patrol and defence. (Koku Shonen via Bueschel)

Above: Kisarazu Naval Air Corps flew patrol missions along Japanese coastal waters prior to overseas assignment at Koepang, Timor, and later Rabaul, New Britain in August 1942. (Asahigraph via Bueschel)

Above: "Nell" bombers arrive at Rabaul, August 1942. (Asahigraph via Bueschel)

Left: The Rabaul reception committee. (Asahigraph via Bueschel)

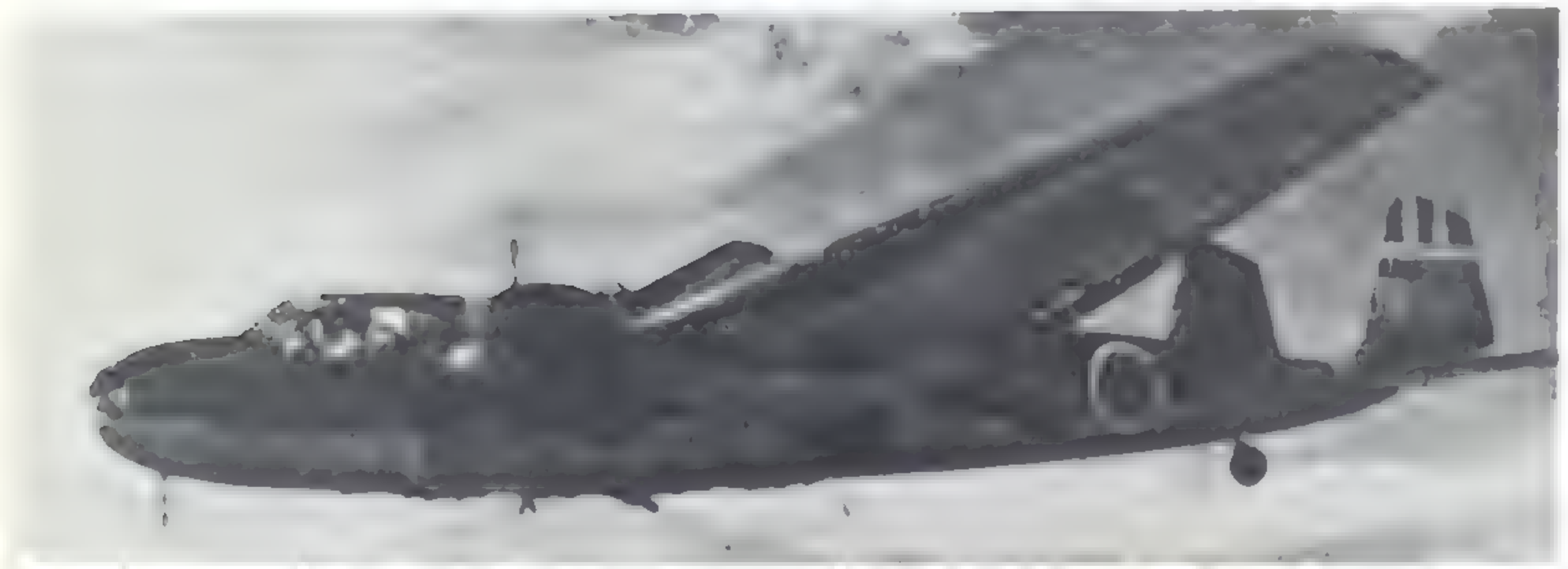
Above: Jungle maintenance at Rabaul was difficult and demanding. (Mannosuke Toda via Bueschel)

Below: Aged but needed, "Nell" took part in the attacks against the American toehold positions on Guadalcanal, autumn 1942. (Hideya Ando via Bueschel)

Above: Mitsubishi G3M2 Model 22 turrets were multi-panelled. Power was a pair of 1,075 h.p. Kinsei 45 radials. (Rekkoku no Gunyoki via Bueschel)

Left: Definitive 96 Rikko production model was the G3M3 Model 23 powered by two Kinsei 51 radials of 1,300 h.p., produced only by Nakajima between June 1942 and February 1943. Blister turrets are cleaned up. (Hideya Ando via Bueschel)

Below: The final "Nell"—a Model 23 of the 707th Naval Air Corps, Koepang, Timor, November 1942. (USAF via Bueschel)



Above: Former 951st Naval Air Corps G3M3 of 1st Escort Fleet equipped with electronic gear for convoy protection and anti-submarine patrol in surrender crosses abandoned at Sumatra, September 1945. (D. P. Woodhall via Bueschel)

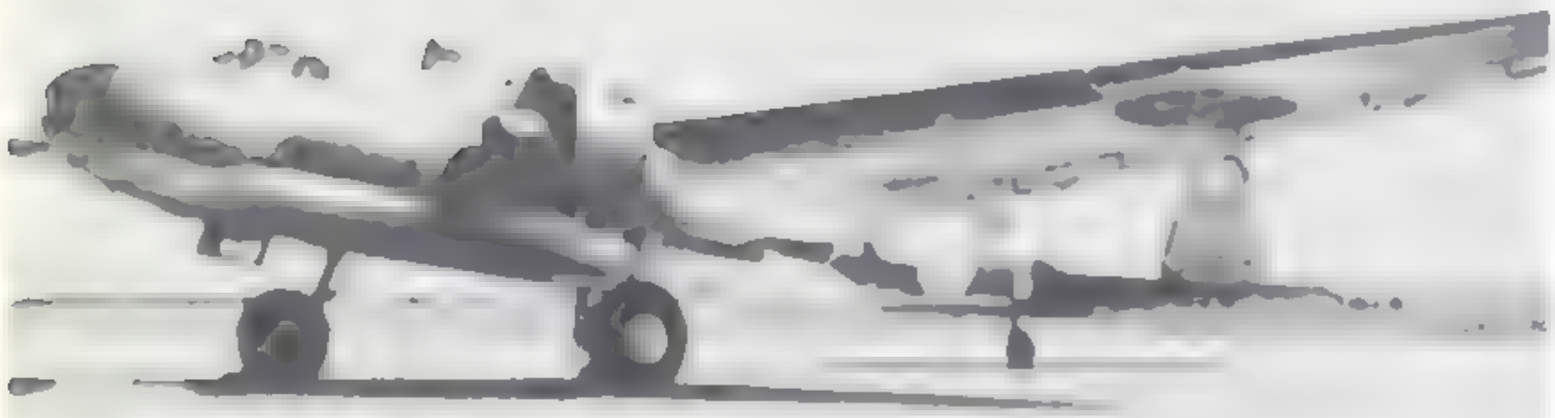
Right: Bulldozed into the bay at Atsugi Field, Japan in October 1945, this "Nell" probably still exists under water. (Fred C. Dickey via Bueschel)

G3M2–K trainers at Tateyama Naval Air Corps for G4M1 "Betty" crew training, February 1942. First invasion operation of the "Special Naval Landing Force" was the successful drop at Menado in the Celebes, 11 January 1942. (Tohosya via Bueschel)

Kusho L3Y2 Type 96 Transport, Model 12, was a transport modification of the G3M2 Model 21. (Koku Fan via Bueschel)

96 Yu transport of the 12th Paratroop Transport Corps. Code name "Tina" was briefly used for the L3Y1 and L3Y2, then dropped for "Nell". (Sekai no Kokuki via Bueschel)

L3Y2 transport of 221st Naval Air Corps, a naval fighter unit flying A6M5 aircraft stationed at Clark Field, Philippines, in October 1944. (R. M. Bueschel)



Polished G3M2 transport "hack" of 722nd Naval Air Corps in the Philippines on liaison trip to Japanese home islands, summer 1944. (Koku Fan via Bueschel)

A direct derivative of the G3M2 Model 21, the Mitsubishi two-engine transport, Model 1 of 1938 had armament removed and added a port entry door and seats for eight passengers. J–BEOA had Kinsei 42 power. (Sora via Bueschel)

J–BEOA was flown by a Naval Reserve civil crew of four of Dai Nippon Koku K.K. (Greater Japan Air Lines) to Teheran, Iran, on the Caspian Sea and return, April 9–16, 1939, as a flag-carrying demonstration of Japanese aeronautical capability. Aircraft was named Soyokase (Zephyr) and was the first of numerous civil versions of the 96 Rikko to make such international demonstration flights. (Koku Jidai via Bueschel)

J–BEOA Soyokaze flies past Mt. Fuji prior to international flight. (Asahigraph via Bueschel)

Outwardly identical to J–BEOA, Dai Nippon Koku K.K. Model 1 J–BAOY was used by the airline for cargo transport service on the Tokyo–Bangkok route beginning in 1939. (Kokutisiki via Bueschel)

Mitsubishi So–Yu Model 2 had modified fuselage to remove "notch" originally provided for 96 Rikko ventral gun position. New fuselage provided additional internal room. J–BEOE was operated by Dai Nippon Koku K.K. as Tatsukaze. (Nihon Hikoki Nenpo via Bueschel)

The civil So–Yu transports were augmented by modified Mitsubishi 96 Rikko and Kusho 96 Yu transports for use on wartime civil routes. This is J–BACS of Dai Nippon Koku K.K. at Syonan (Singapore) in November 1944. (Hideya Ando via Bueschel)

IMPERIAL JAPANESE NAVAL AIR FORCE (JNAF)
UNITS OPERATING MITSUBISHI G3M1/G3M3 96 Rikko

NAVAL AIR CORPS

Air Corps	When used	Area of Operations	Former A/C	Later A/C	Comments
Chitose Code: Chito Code: S 4 Dec. 1941: 4th Air Fleet 24th Air Flotilla	1940– 1 Nov. 1942	Chitose, Hokkaido "Inner South Seas" Kwajalein, Marshalls Wake Rabaul, New Britain	None	G4M	Unit formed at Chitose, Ishikari, on island of Hokkaido. A5M fighters assigned in 1940 for bomber protection. Unit operated 36 G3M2 Model 23 and A6M2 fighter on 4 Dec. 1941. Attacked Wake Island prior to Dec. 1941 invasion. Flew in support of Midway invasion force June 1942. Commander was Captain Fujiro Ohashi. Under 11th Air Fleet in July 1942. Reformed as 703rd Air Corps on 1 Nov. 1942.
Genzan Code: Ke Code: G 4 Dec. 1941: 11th Air Fleet 22nd Air Flotilla	1939– 1 Nov. 1942	Genzan, Chosen China Saigon, French Indo-China Malaya Rabaul, New Britain	None	G6M G4M	Unit formed at Genzan, Chosen (Wonsan, North Korea). Moved to mainland China bases April 1941. Returned to Japan in August. A5M fighters assigned for bomber protection. Unit operated 48 G3M Model 21, 22 and 23 and A6M2 fighters on 4 Dec. 1941. Unit commander was Captain Kameo Sonokawa until arrival at Rabaul April 1942. Took part in sinking of HMS *Repulse* and HMS *Prince of Wales* 10 Dec. 1941 from Saigon. Commander of 2nd Squadron flying Model 22 in attack was Lieut. Sadao Takai. Disbanded May 1942 and reformed as 755th Naval Air Corps. 1 Nov. 1942.
Kanoya Code: Kaya Code: Y Code: K 4 Dec. 1941: 11th Air Fleet 21st Air Flotilla	April 1936– 1 Oct. 1942	Taipei, Formosa Hangchow, China Taipei, Formosa Saigon, French Indo-China Dutch East Indies Kavieng, New Ireland Buin, Solomons	None	G6M G4M	Unit formed at Kanoya, Kagoshima, Kyushu. Took part in first raids in China, 14 August 1937, against Hangchow and Kwangteh from Formosa flying over 400 miles each way over water. Quickly moved to mainland China bases. A5M fighters assigned in 1939 for bomber protection. Returned to Taipei, Formosa in Sept. 1941. Commander was Captain Sizue Ishii. Returned to China in April 1941. Unit operated G3M2 Model 22 on 8 Dec. 1941. Supported Malayan invasion and took part in sinking of HMS *Repulse* and HMS *Prince of Wales*. Renamed 751st Naval Air Corps, 1 Oct. 1942.
Kisarazu Code: Ki Code: R 8 Dec. 1941: 26th Air Flotilla	Aug. 1937– 1 Nov. 1942	Omura, Kyushu China Kisarazu, Japan Koepang, Timor Rabaul, New Britain	G2H1	G4M	Second unit to fly 96 Rikko in combat. Flew trans-oceanic missions across East China Sea from Kyushu against Nanking and Shanghai on 15 Aug. 1937 in a round trip of over 1150 miles. Quickly moved to mainland China bases. Took part in Chungking saturation raids, 1940. 40 G3M2 as second-line "Inner Combat Force" 8 Dec. 1941 for homeland defence. Sent out to locate Task Force 16 carrying Doolittle's Tokyo raiders, 18 April 1941, but unable to find it. Elements transferred to Timor islands, 1942. Arrived at Rabaul, Aug. 1942. Renamed 707th Naval Air Corps, 1 Nov. 1942.
Matsushima (Training) Code: Mashi	Aug. 1944– end of war	Home Islands French Indo-China	None	None	Assigned to training unit for liaison, transport and proficiency training. Model 23 stripped of offensive armament, retaining protective gun positions, used by numerous Naval Air Corps for training.
Mihoro Code: M 4 Dec. 1941 11th Air Fleet 22nd Air Flotilla	June 1938– 1 Nov. 1942	Formosa China Thudaumot, French Indo-China Malaya Tinian, Marianas Kurile Islands	None	G4M	Flew trans-oceanic missions across Formosa Straits from Formosa against Chinese targets, early 1938. Returned to Japan late Aug. 1941 for re-training. Reassigned to French Indo-China in Nov. 1941 to prepare for Malayan campaign. Unit operated 48 G3M2 Model 21 and 22 on 4 Dec. 1941. Took part in sinking of HMS *Repulse* and HMS *Prince of Wales* 10 Dec. 1941 from Saigon. Elements attacked Dutch East Indies and New Britain. Renamed 701st Naval Air Corps, 1 Nov. 1942.
Misawa Code: Misa Code: H 14 July 1942 26th Air Flotilla	1 March 1942– 1 Nov. 1942	Home Islands Saipan, Marianas Tinian, Marianas Kavieng, New Ireland Rabaul, New Britain	None	G4M	Wartime activated unit at Kisarazu, operational April 1942. On 14 July 1942 unit had 36 G3M and G4M bombers. Rushed to Rabaul from its base at Kavieng following American invasion of Guadalcanal. Primary aircraft were G4M1 Land Attack with few G3M3 for training and transport. Arrived at Rabaul in August 1942. Unit decimated at Rabaul. Reformed as 705th Naval Air Corps 1 Nov. 1942.
Ominato Code: Omi 8 Dec. 1941: Ominato Naval Station Force	1936– 1941	Omura, Kyushu Home Islands	None	None	Unit formed at Ominato, Aomori, Honshu on Mutsu Bay. Stationed in northern Honshu, 1936. Operational testing of G3M prototypes, including weather tests of G3M1a on skis. Second-Line "Inner Combat Force" 8 Dec. 1941 for homeland defence. Unit also flew A5M4 and A6M2 fighters.

Air Corps	When used	Area of Operations	Former A/C	Later A/C	Comments
Takao Code: T 4 Dec. 1941: 11th Air Fleet 23rd Air Flotilla	1939– 1 Nov. 1942	China Philippines "Inner South Seas" Kavieng, New Ireland	None	G4U	Unit established at Takao (Kachsung), Formosa. Moved to bases on mainland China. Took part in 1940 saturation raids. Returned to Japan Sept. 1940. Returned to China after April 1941. First unit to attack Philippines, G3M2 striking at Iba and Clark Fields the first day of war. Remained in Philippines for tactical support missions. Unit operated 72 G3M Model 22 and 23 on 4 Dec. 1941. Commander was Captain Kameo Sonokawa, April 1942–Feb. 1943, former Genzan commander. On 14 July 1942 became part of South-west Area Fleet, remaining as 23rd Air Flotilla. Attacked Dutch East Indies and New Britain. Reformed as 753rd Naval Air Corps Nov. 1942.
Tateyama (Training) Code: Ta	June 1936– Dec. 1943	Tateyama, Honshu	None	None	First unit to receive 96 Rikko aircraft. Based at Tateyama, Chiba, Honshu, below Tokyo Bay. Tested prototypes and initial production models under service conditions in summer 1936. Unit flew A5M fighters in 1939–1941. Training unit. Second-line "Inner Combat Force" 8 Dec. 1941 for homeland defence. Later training base for 901st Naval Air Corps and collecting point for various aircraft assigned to 1st Escort Squadron.
Yokosuka (Training) Code: Yo 8 Dec. 1941: Yokosuka Naval Station Force July 1944: 3rd Air Fleet	1938– end of war	Yokosuka, Honshu Home Islands	G2H1	G4M P1Y	Unit formed at Yokosuka, Kanagawa, Honshu on Tokyo Bay. Second-Line "Inner Combat Force" 8 Dec. 1941 for homeland defence. Unit also flew A5M and A6M fighters and trainers. 12 G3M2 on hand 8 Dec. 1941. Retained various models of G3M throughout war for training and transport. 1944–1945 commander was Captain Isamu Inoue.
Yokosuka Naval Air Test Centre Code: Ko	1936– end of war	Yokosuka, Honshu	8-Shi(Ka.9) G1M G2H1	G4M Ki.67 P1Y G5N G8N	Tested all JNAF aircraft including all models of G3M series. Special modifications of G3M series evaluated and modified including photo reconnaissance G3M2–Kai; MAD equipped anti-sub G3M3 modifications; others including transports. Ko marking denoted Kukugizitsusho (Research) aircraft used for tests.
3rd Combined Code: 3 Code: X [illegible] Dec. 1941: 11th Air Fleet 23rd Air Flotilla	April 1941–1942	Taipei, Formosa China Philippines French Indo-China Dutch East Indies Kendari, Celebes New Guinea	None	G4M	Special detachments formed for overflight reconnaissance with modified G3M2–Kai Model 22's equipped with cameras, flying over Philippines, Guam, New Guinea and South-west Pacific. Unit also operated standard G3M2 Model 22 bombers. 72 on hand [illegible] Dec. 1941. Supported invasion of Philippines from Formosa bases. Also flew 92 A6M2 fighters and 12 C5M2 reconnaissance in Philippines. G3M2 elements remained to reduce Bataan. Commander was Captain Yoshio Kamei.
4th Combined Code: S Code: 4 1 April 1942: 25th Air Flotilla	1941– 1 Nov. 1942	Truk, Carolines Rabaul, New Britain	None	G4M	Unit flew G3M2 and A6M2 fighters. On 14 July 1942 unit had 48 G3M and G4M bombers. First bomber unit to be stationed at Rabaul, arriving at Rabaul in February 1942 at time of occupation. 36 G3M2 and G4M1 bombers and 300 flight personnel at Rabaul. Took part in the Battle of the Coral Sea, 7 May 1942. Unit decimated in Solomons and on ground in raids on Rabaul. Disbanded as 4th Air Corps in October 1942 and reformed as 702nd Fighter unit 1 Nov. 1942.
13th Combined Sept. 1937: Code: T Oct. 1937 Code: 4	11 July 1937– 1941	Omura, Japan Shanghai, China Hankow, China	None	None	Combined unit activated at Omura, Japan, on 11 July 1937. Also flew A5M2, and later A5M4, fighters. Based at inland Chinese bases. Took part in 1940 saturation raids. Last unit to fly G3M2 Model 21 in first line combat. Remained sole 96 Rikko unit in China Sept. 1940–April 1941. Fighter unit disbanded 15 Nov. 1940.
15th Combined Code: 10	26 June 1938– 1940	Omura, Japan Hankow, China	None	None	Combined unit formed at Omura, Japan, 26 June 1938. Moved to mainland China bases. Flew A5M2 fighters, with fighter unit disbanded 1 Dec. 1938. Took part in 1940 saturation raids. Returned to Japan Sept. 1940.
203rd Code: 203	Feb. 1944– end of war	Home Islands	None	None	Mixed unit flying A6M, J1N1–S, B5N in patrol and Home Islands defence in company with G3M patrol aircraft. Unit based at Kagoshima Naval Air Station.
705th Nov. 1942: Code: H Code T1 1 Nov. 1942: 26th Air Flotilla 1 Sept. 1943: 25th Air Flotilla	1 Nov.1942– 15 Oct. 1943	Rabaul, New Britain Dutch East Indies	None	G4M	Former Misawa Naval Air Corps reformed as 705th Naval Air Corps 1 Nov. 1942. Original equipment at Rabaul was G3M, with replacement by G4M completed in 1943. Unit originally had 48 aircraft, but raids kept at level of 20 operational aircraft. Remained at Rabaul until Oct. 1943, then transferred to Padang, Dutch East Indies. Second-in-command was Commander Tomoyoshi Hori.

Air Corps	When used	Area of Operations	Former A/C	Later A/C	Comments
707th Code: R 1 Nov. 1942: 26th Air Flotilla	1 Nov. 1942– 30 Nov. 1942	Rabaul, New Britain Buin, Solomons Koepang, Timor	None	G4M	Former Kisarazu Naval Air Corps reformed as 707th Naval Air Corps on 1 Nov. 1942. A few G3M aircraft remained with unit as training and transport types. Unit immediately decimated on ground at Rabaul and Buin. Inactivated in 30 days.
722nd Code: 22	1944– Jan. 1945	Philippines	None	G4M	Assigned to Philippines defence early 1944 prior prior to defence build-up. Decimated in Philippines. Later reformed as homeland defence Special Attack unit.
755th Code: Y1 1 Nov. 1942: 22nd Air Flotilla	1 Nov. 1942– Nov. 1943	Home Islands Tarawa, Gilberts "Inner South Seas"	None	G4M	Former Genzan Naval Air Corps reformed as 755th Naval Air Corps on 1 Nov. 1942. G3M3 aircraft retained by unit for proficiency training. Sole bombing force in the Gilberts. Detachments scattered at Tarawa, Nauru, Maloelap and headquarters at Ruotto. Reinforcements received between July–Nov. 1943 to defend Gilberts-Marshalls.
762nd Code: 762 15 June 1944: 2nd Air Fleet	15 Feb. 1944– 20 Dec. 1944	Kanoya Formosa Philippines	None	G4M Ki.67 P1Y	G3M aircraft retained for crew training. Home base in southern Formosa. Commander was Captain Bunzo Shibata, Feb. 1944 until July 1944. Detachments moved to Philippines 1 Nov. 1944 and based at Clark Field. Decimated there. Unit reformed at Kanoya from remnants, 20 Dec. 1944. Specialized training for night torpedo attacks against shipping.
901st Code: KEA July 1944: 1st Escort Fleet	Sept. 1943– end of war	Shanghai, China Hong Kong, China Sangah, Hainan French Indo-China Manila, Philippines Taipei, Formosa	None	G4M E13A B5N A6M2 A6M5	Unit formed at Tateyama in 1943 to patrol and protect Singapore–Japan shipping routes. Became operational 15 Dec. 1943. Administrative base was Toko, Taipei, Formosa. Mixture of obsolescent aircraft. G3M aircraft carried radar and MAD sub-detection gear. Commander was Captain S. Kamide up to Dec. 1944. Unit claimed 20 subs sunk. Elements formed as Kamikaze unit in April 1945. Last commander was Rear-Admiral Shigetada Horiuchi.
951st Code: Sa July 1944: 1st Escort Fleet	15 Dec. 1944– end of war	Home Islands Mainland China	None	G4M	Mixed home defence and patrol unit flying G3M, G4M, A6M, J2M, B6N, L2D, E14Y, N1K, K10W, K11W, Q1W. Radar and MAD magnetic anti-sub detection gear fitted to G3M3 aircraft. Unit had 120 mixed aircraft at top strength. Also incorporated remaining elements of Maizuru and Sasebo Air Corps.
1001st Code: 01	1944– May 1945	Kagi, Fomosa Home Islands	None	G4M A6M5	Unit formed at Kagi (Chiai), Formosa for homeland defence. Modified G3M and G4M as transports. Reformed as fighter unit flying A6M5 in summer 1945 to defend Kagi Naval Base.
1006th Transport Code: 01	1 July, 1943– end of war	Home Islands	L3Y	G6M1–L2 G4M	Formed as a transport unit flying modified G3M, L3Y, G4M and G6M1–L2 transports.

Note These lists are not to be regarded as complete as only those units for which G3M1/G3M3 use has been confirmed have been identified.

IMPERIAL JAPANESE NAVAL AIR FORCE (JNAF) UNITS OPERATING KUSHO L3Y1/L3Y2 96 Yu

NAVAL AIR CORPS

Air Corps	When used	Area of Operations	Former A/C	Later A/C	Comments
Fleet Detachment Air Squadron Code: C	1938–1940	Northern China Home Islands	L1N	L2D	Fleet communications and base transport. Routine flights between Yokosuka and North China bases.
Tsingtao Base Squadron Code: C Code: 10	1939– Sept. 1940	Tsingtao, China Home Islands	L1N	L2D	Liaison between Home Islands and base transport. Routine flights between Yokosuka and Tsingtao.
11th Transport Fleet Code: 11	1942– end of war	Home Islands Truk, Marshalls, Carolines Rabaul, New Britain Marianas	None	H6K G6M1–L2 G4M1–L L2D H8K	Transport and supply for Pacific island bases.
12th Paratroop transport Code: 12	1940–1942	Home Islands Davao, Philippines Menado, Celebes Koepang, Timor	L1N	L2D	Training and operational "Special Naval Landing Force" for paratroop operations designed to neutralize and capture enemy airfields. Paratroop force used at Menado 11 Jan, 1942 at start of Celebes operations, flying from Davao in Philippines. Two units used consisted of 20 L3Y2 transports and 600 troops. Next and last use was Koepang, Timor, 20 Feb. 1942, facing north-eastern Australia.
South-eastern Fleet Headquarters	Dec. 1943– Feb. 1944	Rabaul, New Britain Truk, Marshall Islands	None	H6K G6M1–L2 G4M1–L L2D H8K	Consolidation of transports assigned to various Naval Air Corps at Rabaul to provide transport pool in South-eastern Fleet for use of all units.

Air Corps	When used	Area of Operations	Former A/C	Later A/C	Comments
201st Fighter June 1943: 1st Air Fleet 26th Air Flotilla	June 1943– Dec. 1943	Home Islands Rabaul, New Britain	A6M	N1K1–J	Mobile base transport and supply. Two transports assigned to unit on station at Rabaul. Unit arrived at Rabaul in June 1943 flying 50 A6M3 fighters. 75 pilots assigned to unit. Commander Captain Sakae Yamamoto. Transports re-assigned to SE Fleet Hdqs., Dec. 1943. Fighter unit left Rabaul in Jan. 1944.
204th Fighter Code: T2 June 1943: 1st Air Fleet 22nd Air Flotilla	Nov. 1942– Dec. 1943	Home Islands Rabaul, New Britain Buna, New Guinea	A6M	None	Former 6th Naval Air Corps. Mobile base transport and supply. Two transports assigned to unit on station at Rabaul. Unit arrived at Rabaul in Dec. 1942 as part of Guadalcanal defence build-up. Flew 50 A6M3 fighters. 75 pilots assigned. Transport assigned to SE Fleet, Dec. 1943. Fighters evacuated to Truk in Jan. 1944 and disbanded March 1944 after high losses in American bombing raids.
221st Fighter Code: 221 Jan. 1945: 2nd Air Fleet 26th Air Flotilla	Jan. 1944– Jan. 1945	Home Islands Philippines	A6M	None	L3Y2 aircraft used for base transport and supply of fighter unit. Unit trained in Japan Jan.–Aug. 1944, going operational for Philippines defence. Assigned to Clark Field, Luzon, Philippines. Elements formed as Kamikaze units, Nov. 1944. Unit decimated and terminated Jan. 1945.
253rd Fighter 11th Air Fleet 25th Air Flotilla	Nov. 1942– Dec. 1943	Home Islands Rabaul, New Britain	A6M	None	Mobile base transport and supply. Two transports assigned to unit on station at Rabaul. Arrived at Rabaul Nov. 1942 as early part of Guadalcanal defence build-up. 150 air personnel; 75 pilots; 50 A6M3 aircraft. Transport assigned to SE Fleet, Dec. 1943. Fighter unit evacuated to Truk Feb. 1944. Commander was Cmdr. Okasawara.
501st Attack	Nov. 1943– Dec. 1943	Home Islands Rabaul, New Britain	D4Y	None	Mobile base transport and supply. Two transports assigned to unit on station at Rabaul, Nov. 1943. Commander was Cmdr. Sakata. Transports assigned to SE Fleet Hdqs. Dec. 1943 to form transport pool for all Rabaul units. Bomber unit assigned in Feb. 1944 to Truk, Marianas and Carolines.
552nd Attack	Autumn 1942– Dec. 1943	Home Islands Rabaul, New Britain	B5N D3A	D4Y	Mobile base transport and supply. Two transports assigned to unit on station at Rabaul, Nov. 1943. Arrived at Rabaul Dec. 1943 with 150 flight personnel, 12 B5N2 and 24 D3A2 aircraft. Transports assigned to SE Fleet Hdqrs. Dec. 1943. Bomber unit moved to Truk Feb. 1944.
801st Torpedo–Reconnaissance Code: 801	1 Nov. 1942– end of war	Yokohama, Honshu Kurile Islands Okinawa Home Islands	H6K H8K	G4M	Former Yokohama Naval Air Corps wiped out at Tulagi, reformed 1 Nov. 1942. Remnants left Rabaul in March 1943 for reformed unit in Japan. L3Y2 transports used to supply unit flying-boat bases. Convoy escort and anti-sub patrol in Sea of Japan. Home base Yokohama, Kanagawa, on Tokyo Bay.
938th Observation Code: 938	1 Nov. 1942– Dec. 1943	Home Islands Rabaul, New Britain Buin, New Guinea Home Islands	F1M E13A	None	Mobile base transport and supply. Two transports assigned to unit on station at Rabaul. Unit arrived at Rabaul April 1943. Unit disbanded Dec. 1944 with elements transferred to 958th Observation Naval Air Corps. Transports assigned SE Fleet Hdqs. Dec. 1943.
958th Observation Code: 958	1 Nov. 1942– Dec. 1943	Home Islands Rabaul, New Britain Home Islands	F1M E13A A6M2–N	None	Mobile base transport and supply. Two transports assigned to unit on station at Rabaul. First observation seaplane unit to be stationed at Rabaul, April 1942. Unit ultimately had 1600 personnel. Commander was Captain Iida. Transports assigned SE Fleet Hdqs. Dec. 1943.
1006th Transport Code: 01	1 July, 1943– end of war	Home Islands	G3M	G6M1–L2 G4M	Transport unit flying modified G6M1–L2, G4M, G3M, L3Y transports.
Yokohama Code: Y 14 July, 1942: 11th Air Fleet 25th Air Flotilla	March 1942– 1 Nov. 1942	Yokohama, Honshu Rabaul, New Britain Rekata Bay, Solomons Tulagi, Solomons	H6K	A6M2–N H8K	Flying-boat and float-plane reconnaissance unit formed at Yokohama, Kanagawa, on Tokyo Bay flying H6K, H8K and A6M2–N. Unit arrived at Rabaul in March 1942 with L3Y2 transports flying gear and personnel. Unit had 150 flight personnel. Unit operational in April 1942. Flew out of Shortlands, then transferred to Tulagi, Florida Island, in the Solomons. Wiped out in Guadalcanal attack, 7 Aug. 1942. Reformed as 801st Air Corps.
Yokosuka (Training) Code: Yo July 1944: 3rd Air Fleet	1941– end of war	Yokosuka, Honshu Iwo Jima Home Islands	G2H1 G3M	G4M P1Y	Home base at Yokosuka, Kanagawa, Honshu on Tokyo Bay. Flew G3M and G4M bombers; A5M and A6M fighters. Retained various models of G3M, L3Y1 and L3Y2 for training and transport throughout war. 1944–1945 commander was Captain Isamu Inoue.
Yokosuka Naval Air Test Centre Code: Ko	1938– end of war	Yokosuka, Honshu	All current JNAF aircraft	All current JNAF aircraft	Tested all JNAF aircraft, including all models of L3Y series. Also used L3Y1 and L3Y2 aircraft for base transport squadron.

Note: These lists are not to be regarded as complete as only those units for which L3Y1/L3Y2 use has been confirmed have been identified.

Sand

Spinach Green

Dark Green

A3
Upper surfaces, diagonal white stripes applicable to A3 only. The camouflage pattern in either sand and spinach or dark brown and dark green was applied in a haphazard manner and not in a standard pattern(s) as on RAF bombers.

A5
Upper surfaces.

B2
Upper surfaces.

A3
Under surfaces, applicable to all aircraft in all under surface schemes except where in isolated cases the yellow leading edge was applied as on G3.

B3
Upper surfaces,
under surfaces identical.

E1/2
Upper surfaces,
under surfaces identical.

Pale Grey

Natural Metal

Red

Light matt
Grey-blue

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6 Curtiss (P-40) Kittyhawk Mk. I/IV
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Netherlands East Indies Air Force

West German Luftwaffe

Front cover, top to bottom:

FC1 Mitsubishi G3M1c, Mitsubishi Flight Test Department, Kasumigaura Ai
FC2 Mitsubishi G3M1, Kanoya Naval Air Corps, Taipei, Formosa, July 1937
FC3 Mitsubishi G3M2, Kisarazu Naval Air Corps, Koepang, Timor, July 19
FC4 Nakajima G3M3, 755th Naval Air Corps, "Inner South Seas" Tarawa, (
FC5 Nakajima G3M2, Kokosuka Naval Air Corps, Kokosuka, Honshu, Japa